



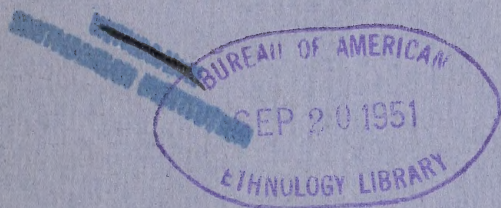




27

ANNUAL REPORT

1950



Chicago Natural History Museum



SAMUEL INSULL, JR.

Third Vice-President of the Museum

Member of the Board of Trustees since 1929

Chairman of the Pension Committee

Member of the Executive Committee

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CHICAGO NATURAL HISTORY MUSEUM

Report of the Director

to the

Board of Trustees

for the year 1950



CHICAGO, ILLINOIS

JANUARY 1951

PRINTED IN THE UNITED STATES OF AMERICA
BY CHICAGO NATURAL HISTORY MUSEUM PRESS

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Chicago Natural History Museum, formerly Field Museum of Natural History, faces Roosevelt Road at Lake Shore Drive. It is open every day except Christmas and New Year's Day and may be reached by elevated or surface railways, South Shore and Illinois Central suburban trains, or bus. There is ample free parking space.

MICHIGAN AVENUE SKY LINE, FROM THE MUSEUM

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	HARLOW N. HIGINBOTHAM*	1898-1908
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TREASURERS	BYRON L. SMITH*	1894-1914
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* Deceased

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FRED W. SARGENT,* 1929-1939
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CHARLES A. McCULLOCH,* 1936-1945
THEODORE ROOSEVELT,* 1938-1944
BOARDMAN CONOVER,* 1940-1950

*Deceased

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 ALBERT B. DICK, JR., *Second Vice-President*
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Finance—Solomon A. Smith, Leopold E. Block, Albert B. Dick, Jr., John P. Wilson, Walter J. Cummings, Albert H. Wetten, Henry P. Isham

Building—Albert H. Wetten, William H. Mitchell, Lester Armour, Joseph N. Field, Boardman Conover*

Auditing—Wm. McCormick Blair, Clarence B. Randall, Marshall Field, Jr.

Pension—Samuel Insull, Jr., Sewell L. Avery, Hughston M. McBain

* Deceased, 1950

List of Staff, 1950

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CLIFFORD C. GREGG

DEPUTY DIRECTOR

JOHN R. MILLAR

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 FAY-COOPER COLE, *Research Associate, Malaysian Ethnology*
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 A. L. KROEBER, *Research Associate, American Archaeology*
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 ELAINE BLUHM, *Assistant, Archaeology*
 GEORGE I. QUIMBY, *Curator of Exhibits*
 ROBERT J. BRAIDWOOD, *Research Associate, Old World Prehistory*
 MIGUEL COVARRUBIAS, *Research Associate, Primitive Art*
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 GUSTAF DALSTROM, *Artist*
 JOHN PLETINCKX, *Ceramic Restorer*
 WALTER C. REESE, *Preparator*
 PAUL J. WARNER,* *Preparator*
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 PAUL C. STANDLEY, *Curator Emeritus, Herbarium*
 JULIAN A. STEYERMARK, *Curator, Herbarium*
 GEORGE A. DAVIS, *Assistant, Herbarium*
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 JOSÉ CUATRECASAS,† *Curator, Colombian Botany*
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 FRANCIS DROUET, *Curator, Cryptogamic Botany*
 HANFORD TIFFANY, *Research Associate, Cryptogamic Botany*
 DONALD RICHARDS, *Research Associate, Cryptogamic Botany*
 HUGH C. CUTLER, *Curator, Economic Botany*

* Deceased, 1950

† Resigned, 1950

DEPARTMENT
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(Continued)

LLEWELYN WILLIAMS, *Associate, Forest Products*
J. S. DASTON, *Assistant, Botany*
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MILTON COPULOS, *Artist-Preparator*
SAMUEL H. GROVE, JR., *Artist-Preparator*
FRANK BORYCA, *Preparator*
MATHIAS DONES, *Preparator*
PHYLLIS WADE, *Departmental Secretary*

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RAINER ZANGERL, *Curator, Fossil Reptiles*
ROBERT H. DENISON, *Curator, Fossil Fishes*
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EVERETT C. OLSON, *Research Associate, Fossil Vertebrates*
PRISCILLA F. TURNBULL, *Assistant, Fossil Vertebrates*
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GEORGE LANGFORD, *Curator, Fossil Plants*
R. H. WHITFIELD, *Associate, Fossil Plants*
VIOLET S. WHITFIELD, *Associate, Fossil Plants*
ERNST ANTEVS, *Research Associate, Glacial Geology*
ROBERT K. WYANT, *Curator, Economic Geology*
HARRY E. CHANGNON, *Curator of Exhibits*
ORVILLE L. GILPIN, *Chief Preparator, Fossils*
HENRY HORBACK, *Preparator*
WILLIAM D. TURNBULL, *Preparator*
STANLEY KUCZEK, *Preparator*
HENRY U. TAYLOR, *Preparator*
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BOARDMAN CONOVER,* *Research Associate, Birds*
LOUIS B. BISHOP,* *Research Associate, Birds*
RUDYERD BOULTON, *Research Associate, Birds*
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ELLEN T. SMITH, *Associate, Birds*
CLIFFORD H. POPE, *Curator, Amphibians and Reptiles*
CH'ENG-CHAO LIU, *Research Associate, Reptiles*
HYMEN MARX, *Assistant, Reptiles*

* Deceased, 1950

**DEPARTMENT
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ZOOLOGY
(Continued)**

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 ROBERT F. INGER, *Assistant Curator, Fishes*
 ROBERT KANAZAWA,† *Assistant, Fishes*
 MARION GREY, *Associate, Fishes*
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 RUPERT L. WENZEL, *Curator, Insects*
 HENRY S. DYBAS, *Associate Curator, Insects*
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 CHARLES H. SEEVERS, *Research Associate, Insects*
 ALEX K. WYATT, *Research Associate, Insects*
 AUGUST ZIEMER, *Assistant, Insects*
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 DOROTHY B. FOSS, *Osteologist*
 R. M. STRONG, *Research Associate, Anatomy*
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 LEON L. WALTERS, *Taxidermist*
 FRANK C. WONDER, *Taxidermist*
 RONALD J. LAMBERT, *Assistant Taxidermist*
 KENNETH WOHLCK,† *Assistant Taxidermist*
 CARL W. COTTON, *Assistant Taxidermist*
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 MARGARET G. BRADBURY, *Artist*
 MARGARET J. BAUER, *Departmental Secretary*

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 MARY P. MURRAY, *Assistant*
 HELEN ATKINSON MACMINN, *Miscellaneous Publications*

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EXTENSION**

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 GEORGE STEINHARDT, *Assistant*

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AND
ANNA LOUISE
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FOUNDATION**

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 LORAIN FARMER
 MARIE SVOBODA
 HARRIET SMITH
 JANE SHARPE
 ANNE STROMQUIST

† Resigned, 1950

THE LAYMAN
LECTURER

PAUL G. DALLWIG

THE LIBRARY

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EMILY M. WILCOXSON, ‡ *Librarian Emerita*

LOUISE BOYNTON DENISON, *Administrative Assistant*

Classification and Cataloguing:

EUNICE MARTHENS GEMMILL, *Associate Librarian*

DAWN DAVEY, *Classifier*

M. EILEEN ROCOURT, *Cataloguer*

Reference:

RUTH DEBUS, *Reference Librarian*

WINIFRED E. WEISSMAN, *Assistant Reference Librarian*

MARY E. BABCOCK, † *Assistant*

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BENJAMIN BRIDGE, * *Auditor Emeritus*

A. L. STEBBINS, *Assistant Auditor*

ROBERT E. BRUCE, *Purchasing Agent*

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JESSIE DUDLEY, *in charge*

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AND RECORDS

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ELSIE H. THOMAS, *Recorder*

EDNA T. ECKERT, † *Assistant Recorder*

HILDA NORDLAND, *Assistant Recorder*

E. LELAND WEBBER, *Assistant Recorder*

JEANNETTE FORSTER, *Assistant Recorder*

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RELATIONS
COUNSEL

H. B. HARTE

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MEMBERSHIPS

PEARLE BILINSKE, *in charge*

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PHOTOGRAPHY
AND
ILLUSTRATION

HERMAN ABENDROTH, † *Photographer*

JOHN BAYALIS, *Photographer*

DOUGLAS E. TIBBITTS, *Illustrator*

‡ Retired, 1950

† Resigned, 1950

* Deceased, 1950

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MOTION PICTURES**

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**DIVISION OF
PRINTING**

RAYMOND H. HALLSTEIN, *in charge*
HAROLD M. GRUTZMACHER, *Assistant*

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GUSTAV A. NOREN, *Assistant Superintendent*

ENGINEERING

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LEONARD CARRION, *Assistant Chief Engineer*

THE GUARD

DAVID J. CONWILL,* *Captain*
GEORGE WOODWARD, *Captain*

* Deceased, 1950



Chicago Natural History Museum
South Entrance

Annual Report

of the Director

To the Trustees:

I have the honor to present a report of the operation of the Museum for the year ending December 31, 1950.

This year brought about the completion of the modernization of the boiler plant. The total cost of the improvement amounted to \$183,424.46, which expenditure reduced the Reserve for Depreciation of Mechanical Plant to \$36,213.55. An appropriation of \$10,000 to the Depreciation Reserve during the year brought the total of that fund at the end of the year to \$46,213.55.

The continuous expansion of the Museum's collections has brought about acute storage problems in many of the departments and divisions. In the Division of Fishes the situation had become such that immediate action to provide additional space was necessary. Not only was space limited but, in addition, the increasing weight of steel shelving, fish specimens, and the heavy glass jars of alcohol in which the specimens are preserved had so nearly reached the safety limits that the Board of Trustees decided to move the entire Division of Fishes to a location on the ground floor. During the year this tremendous move was accomplished, and the Division of Fishes is now housed in the ground-floor area formerly designated as Hall B. The construction includes the addition of several built-in concrete tanks for large specimens, chain and pulley equipment for handling, steel shelving and cases, and new modern offices. The

increase in storage capacity for our rapidly expanding collection of fishes will amount to at least fifty per cent. The sum of \$22,726.44 was spent during the year in preparing the new area for occupancy. Other plans have been developed that contemplate the moving and expansion of the Division of Vertebrate Anatomy and of the Division of Insects.

The death on May 5 of Boardman Conover, a Trustee of the Museum, was a severe blow both to the Board of Trustees and to the staff. Mr. Conover was also a Research Associate of the Museum in the Division of Birds and spent most of his time in acquiring, studying, and describing his outstanding collection of game birds of the world. This collection of some eighteen thousand specimens, together with his extensive library, was left to the Museum. In addition, Mr. Conover's will provides a fund of \$50,000 to continue in perpetuity the vitally important work in which he was engaged. In recognition of his many contributions and services the Board of Trustees elected Mr. Conover posthumously a Benefactor of the Museum (see page 103), having honored him in the past by electing him, at various times, a Life Member, a Patron, a Contributor, and a Corporate Member. The Board of Trustees acted further to honor the memory of Mr. Conover by voting to name Hall 21, the hall housing collections of birds in systematic arrangement, Boardman Conover Hall. At its meeting in May the Board of Trustees adopted the following resolution:

BOARDMAN CONOVER, 1892-1950

"It is with profound regret that the Board of Trustees of Chicago Natural History Museum records the death on May 5, 1950, of their fellow member, Boardman Conover.

"Mr. Conover has long been associated with Chicago Natural History Museum. As early as 1920 his interest in the study of birds brought him into contact with members of the scientific staff. In 1924, he became a Life Member of the Museum and in recognition of his research in the field of ornithology he was placed on the staff as an Associate. In 1936, he was appointed Research Associate.

"Mr. Conover's interest in the work of the Museum also found expression at various times in field exploration and study in Venezuela, Chile, Alaska, the Belgian Congo, Tanganyika, and Uganda. In later years, in lieu of expeditionary work, he established contact with field collectors in all parts of the world. Through his own efforts and at his own expense he accumulated one of the world's outstanding collections of game birds.



DuBois-Drake Studio

BOARDMAN CONOVER

1892-1950

Associate in Ornithology, 1924; Life Member, 1924; Patron, 1926; Contributor, 1930; Research Associate in Birds, 1936; Member of the Board of Trustees, 1940; Corporate Member, 1940; Benefactor, 1950

"In recognition of his work for the Museum, he was elected in 1926 to the honorary classification of Patron of the institution. In 1940, he was invited to become a member of the Board of Trustees, on which he served until his death. He was elected a Corporate Member in the same year.

"For many years, he maintained an office at the Museum, where he conducted research on his famous collection of game birds. After the death of Dr. Charles E. Hellmayr in the spring of 1944, Mr. Conover undertook the arduous duty of completing the *Catalogue of Birds of the Americas*, which had been begun by Charles B. Cory in 1909, and he brought that notable work to completion in August, 1949. His deep interest in the Museum is further indicated by the fact that his gifts to the institution total more than \$100,000.

"He will be missed not only by the members of the Board of Trustees but by the members of the staff, with whom he was a co-worker for so many years. In appreciation of his long association with the Museum and his notable service to the institution, and in recognition of his fine friendship and outstanding character, we pay tribute to the memory of Boardman Conover.

"Therefore, be it resolved that this testimonial of our esteem and affection be placed on the permanent records of the Board of Trustees of Chicago Natural History Museum;

"And be it further resolved that our deep sympathy be conveyed to the members of his bereaved family and that a copy of this resolution be sent to them."

ATTENDANCE

The total number of visitors at the Museum in 1950 was 1,173,661, of which number 1,052,420 were admitted without charge because they came on free admission days or belonged to classifications admitted free on all days—school children, students, teachers, members of the armed forces of the United Nations, and Members of this Museum. (For comparative attendance statistics and door receipts for 1949 and 1950, see page 90.)

The number of out-of-Chicago schools using the Museum continued to increase until in May the number reached an all-time high of 177 groups totaling 5,517 students. The fall (October and November) attendance of students in the Museum was the highest since before the war (1941). Many Boy Scout troops on their way to the 1950 Boy Scout Jamboree at Valley Forge, Pennsylvania, stopped between trains at the Museum for special tours of the

exhibition halls. Boys and girls from the farms of America, chosen in each locality for excellence of achievement and sent to Chicago at the time of the International Livestock Exposition as delegates to the National Congress of 4-H Clubs, made their annual visit to the Museum in November. The Museum was host also to a number of organizations, among them the American Horticultural Council, the American Malacological Union, the Illinois Audubon Society, and the Kennicott Club of Chicago. In May the Museum entertained a group of supervisory personnel of the Chicago Park District at a buffet dinner and program in the cafeteria, after which the guests were taken on guided tours of the Museum. The facilities of the Museum were used in September for day and night sessions of government officials who met to analyze plans for civil defense.

TRUSTEES AND OFFICERS

Stanley Field, president of Chicago Natural History Museum, was re-elected at the Annual Meeting of the Board of Trustees in January to serve for his forty-second consecutive year. All other officers were likewise re-elected. They are: Marshall Field, first vice-president; Albert B. Dick, Jr., second vice-president; Samuel Insull, Jr., third vice-president; Solomon A. Smith, treasurer; Clifford C. Gregg, secretary; and John R. Millar, assistant secretary.

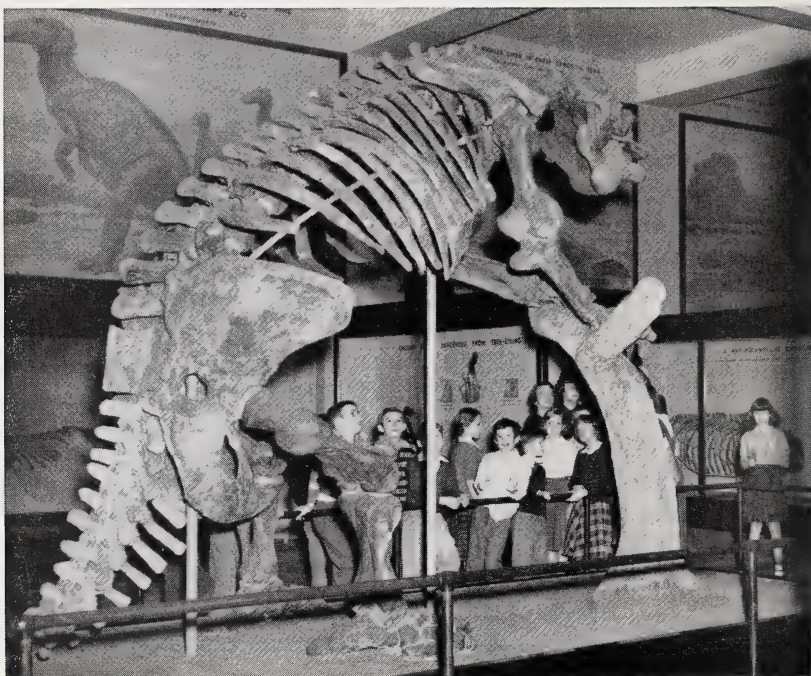
MEMBERSHIP

An expression of gratitude is here conveyed to the many public-spirited citizens who, as Members of this Museum, support the scientific and educational work being done here and help to make possible its successful continuance. In recognition of their past support, appreciation is here expressed also to those Members who found it necessary to discontinue their membership. When conditions are favorable for them to do so, it is hoped that they will resume membership and association with the cultural work of the Museum. The total number of Members at the close of 1950 was 4,775. The number of Members in each membership classification was as follows: *Benefactors*—24; *Honorary Members*—8; *Patrons*—17; *Corresponding Members*—6; *Contributors*—172; *Corporate Members*—40; *Life Members*—161; *Non-Resident Life Members*—16; *Associate Members*—2,274; *Non-Resident Associate Members*—11; *Sustaining Members*—21; *Annual Members*—2,025. The names of Members of the Museum during 1950 are listed at the end of this Report.

JAMES NELSON AND ANNA LOUISE RAYMOND
FOUNDATION FOR PUBLIC SCHOOL AND
CHILDREN'S LECTURES

The James Nelson and Anna Louise Raymond Foundation continued in 1950 its presentation of lectures, tours, programs, stories, and motion pictures to groups of people in the Museum and, by means of its extension-lecture service, in the schools. As in the past the entire program of this educational division of the Museum has been kept flexible in order to meet the requirements of school groups and students of all kinds. Closer co-operation between the Museum and the Chicago Public Schools and a study of the needs of the schools resulted in the publication of a folder of general information about the Museum and its educational services. Seasonal flyers with suggested tours were added for the teacher's reference. These were sent to all the Chicago Public Elementary Schools, with the result that these schools have made greater use of the Museum.

A group of children from one of the many organized school groups that visit the Museum view the great ground sloth in the Hall of Fossil Vertebrates (Hall 38).



Two series of Museum Stories for Children were published in connection with the spring and fall series of motion-picture programs for children. The spring series, "Children of Long Ago," tells how children of ancient Egypt, Babylonia, and China lived. The fall series, "Adventures of a Pebble," takes a pebble from its very beginning to the present time. All extension lectures were re-organized and brought up to date with the addition of new pictures, either still or motion. One entirely new lecture, "The Natural History of Chicagoland," was offered in 16mm natural-color film. A one-day conference on nature-study was given in September for forty-three instructors and supervisors of the Chicago Park District. Raymond Foundation again co-operated with the Radio Council of the Chicago Public Schools in presenting four programs in the Museum following radio broadcasts. Dr. Austin L. Rand, Curator of Birds, was guest-speaker for the broadcast "Feathered Architects" on the Science Story-Teller series.

A summary of all activities of Raymond Foundation for the year, with attendance figures, follows:

RAYMOND FOUNDATION ACTIVITIES

ACTIVITIES WITHIN THE MUSEUM

For children	Groups	Attendance	Groups	Attendance
Tours in Museum halls.....	927	29,234		
Radio follow-up programs.....	4	455		
Lectures preceding tours.....	87	5,436		
Motion-picture programs.....	29	21,339		
TOTAL.....			1,047	56,464
For adults				
Tours in Museum halls.....	380	6,672		
TOTAL.....			380	6,672

EXTENSION ACTIVITIES

Chicago public schools				
Elementary schools.....	102	33,461		
Chicago private schools.....	3	310		
Suburban schools.....	2	430		
Miscellaneous.....	2	650		
TOTAL.....			109	34,851
TOTAL FOR RAYMOND FOUNDATION ACTIVITIES.....			1,536	97,987

SPECIAL EXHIBITS

"Stories in Hair and Fur," a special exhibit in Stanley Field Hall during August and September, was prepared as a series of thirty panels by the Cranbrook Institute of Science, of Bloomfield Hills, Michigan. The exhibit presented information about the structure of hair and the qualities and kinds of fur, the gathering of furs, the near-extirpation of many fur-bearing animals, and the modern business of breeding animals for their fur. Late in October one of the Mogollon "mummies" found in Tularosa Cave, New Mexico, by the 1950 Southwest Archaeological Expedition was placed on exhibition. Representative artifacts of perishable materials from the Mogollon culture were included in the exhibit. Other special exhibits during the year were "Animals in Action," a collection of photographs by Roman Vishniac, of New York; the Fifth Chicago International Exhibition of Nature Photography, held under the auspices of the Nature Camera Club of Chicago and the Museum; and paintings and drawings of Museum exhibits by students of the School of the Art Institute of Chicago.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The adjusted delivery schedule of portable Museum exhibits instituted at the beginning of the school year 1949-50 continued in operation during the school months of 1950. Under this schedule each school on the circulation list of the Department of the N. W. Harris Public School Extension received, every tenth school day, two Museum exhibits that could be used for direct study and general discussion in the classrooms or, if preferred, as display material. During each period of ten school days the drivers of the two Harris Extension trucks delivered and exchanged exhibits for nine days and served in the workshop on the tenth day. From its inception the schedule was found to be satisfactory. It permitted more efficient use of the drivers' time for assisting the preparators.

At the close of 1950 the circulation list numbered 508. Of these, 487 were schools (96 per cent of total circulation) and 21 were social-service institutions (4 per cent of total circulation). Of the 487 schools, 390 were public schools (80 per cent of school circulation), 87 were parochial schools (18 per cent of school circulation), and 10 were private schools (2 per cent of school circulation). Inasmuch as each school or social-service institution on the list received on loan 34 different exhibits during the year, routine loans of portable Museum exhibits in 1950 totaled well over 17,000.



This is one of six new portable exhibits of the N. W. Harris Extension Department designed to acquaint Chicago school children with different types of bird nests.

In addition to the Museum exhibits of natural-history material installed in standard portable cases Harris Extension also lends, upon request for specific material, insect specimens, rock and mineral collections, bird and mammal skins, bird eggs, and American Indian artifacts, which can be handled by pupils for study purposes. Thirty-seven loans of such material were made in 1950. Harris Extension received from the Department of Zoology an extensive collection of eggs of birds of the Chicago area. The Department of Botany gave invaluable advice and guidance in the preparation of botanical exhibit material. Six new exhibits were completed during the year, and five old exhibits were completely revised. Two hundred and eighty-five cases were repaired and reconditioned in the workshop. The number of cases damaged in circulation was 32. Outside activities of staff members consisted of local collecting trips.

LECTURE PROGRAMS FOR ADULTS

Seventeen Saturday afternoon lectures were presented to the public during March, April, October, and November. A total of 16,672 persons attended. Timely subjects, such as postwar rehabilitation in Japan and the mingling of ancient and modern in Korea under various fortunate and unfortunate influences, were well received by the audiences. It is gratifying to be able to report that a substantial number of letters of appreciation for various lectures in the series has been received in the Office of the Director. Helpful comments are always welcome because they serve as guides in the selection of the material presented in the two series.

GIFTS TO THE MUSEUM

Elmer J. Richards, of Chicago, again gave \$5,000 to the Museum to be used to purchase specimens for the cryptogamic herbarium. Donald Richards, Research Associate in Cryptogamic Botany, gave \$3,182.95 for the purchase of laboratory equipment and cryptogamic specimens. S. C. Johnson and Sons, Incorporated, of Racine, Wisconsin, again gave \$4,000 for research on wax-bearing palms. Walther Buchen, of Chicago, gave \$2,000 for an expedition to Africa and the purchase of zoological specimens. Dr. Maurice L. Richardson, of Lansing, Michigan, added \$2,000 to The Maurice L. Richardson Paleontological Fund. The Museum received \$10,500 from Stanley Field, its President; \$500 from C. Suydam Cutting, of New York, a Patron of the Museum; \$1,000 from an anonymous friend; \$301.94 from the estate of Mrs. Abby K. Babcock; \$1,666.67 from the estate of Mrs. Joan A. Chalmers; and \$65,216.51 from the estate of Mrs. Anna Louise Raymond. Other gifts of money were received from Peder Christensen, of Seattle, Clarence B. Randall, Trustee of the Museum, and anonymous givers.

Donors who give or devise to the Museum between \$1,000 and \$100,000 in money or materials are elected by the Board of Trustees to a special membership classification designated as "Contributors" and their names are enrolled in perpetuity (see page 104 for names of Contributors). Contributors elected in 1950 are: Emil Eitel, posthumously elected (gift of money); Mrs. Susie I. Grier, posthumously elected (gift of anthropological specimens and books); Henry W. Nichols, former Chief Curator of the Department of Geology, posthumously elected (gift of botanical specimens, geological specimens, books, and periodicals); Dr. William C. Ohlendorf, Park Ridge, Illinois (gift of botanical specimens, zoological speci-

mens, and books); Miss Lillian A. Ross, Associate Editor of Scientific Publications (gift of money, botanical specimens, zoological specimens, and books); and Dr. R. H. Whitfield, Associate in the Division of Fossil Plants (gift of geological specimens). A complete list of gifts of materials from individuals and institutions in 1950 appears elsewhere in this Report. Some of the collections are described under the headings of the scientific departments.

PERSONNEL

Curator William J. Gerhard, in charge of the Division of Insects from the time of its establishment in 1901, retired on December 31 with the longest service record of any staff member of the Museum now living. He will continue scientific research in the Museum as Curator Emeritus. Paul C. Standley, Curator of the Herbarium, who joined the staff in 1928 as Associate Curator of the Herbarium and became Curator in 1937, retired on December 31. He will live in Honduras, where, as Curator Emeritus, he will continue for the Museum his studies of Central American plants. Mrs. Emily M. Wilcoxson, who was given the title of Librarian Emerita in 1946 after forty-one years on the staff, left the service of the Museum in March. Herman Abendroth, Photographer, and Mrs. Edna T. Eckert, Assistant Recorder, retired during the year. Robert Kanazawa, Assistant in the Division of Fishes, Kenneth Woehlck, Assistant Taxidermist, Leonard Rosenthal, Preparator in the Department of the N. W. Harris Public School Extension, and Miss Mary E. Babcock, Assistant in the Library, resigned. Dr. José Cuatrecasas, Curator of Colombian Botany, terminated his contract with the Museum and accepted a John Simon Guggenheim Memorial Foundation Fellowship.

Dr. John B. Rinaldo, Assistant in Archaeology, was promoted to Assistant Curator, and Miss Elaine Bluhm was appointed Assistant. Dr. Julian A. Steyermark, Associate Curator of the Herbarium, was promoted to Curator to succeed Curator Emeritus Standley. Samuel H. Grove, Jr., Assistant in Plant Reproduction, was made Artist-Preparator, Frank Boryca, Assistant in Plant Reproduction, was made Preparator, and Miss Phyllis Wade was appointed Secretary of the Department of Botany. George Langford, Assistant Curator of Fossil Plants, was promoted to Curator, and Mrs. Priscilla F. Turnbull was appointed Assistant in the Division of Fossil Vertebrates. Rupert L. Wenzel, Assistant Curator of Insects, was promoted to Curator to succeed Curator Emeritus Gerhard,

and Henry S. Dybas, Assistant Curator of Insects, was made Associate Curator. August Ziemer was appointed Assistant in the Division of Insects, Hymen Marx was promoted to Assistant in the Division of Amphibians and Reptiles, and George Steinhardt, a new employee, became Assistant in the Department of the N. W. Harris Public School Extension. Carl W. Cotton, Assistant in the Division of Vertebrate Anatomy, was made Assistant Taxidermist. Miss Ruth Debus, assistant in the Library in 1947, rejoined the staff as Reference Librarian. John Bayalis, Assistant Photographer, was promoted to Photographer, E. Leland Webber and Miss Jeannette Forster were made Assistant Recorders, Mrs. Jessie Dudley was placed in charge of the Museum Book Shop, and George Woodward was promoted to Captain of the Guard.

It is with regret that I record the death of Evan Andrews, Museum employee in the Division of Maintenance; Dr. Louis B. Bishop, Research Associate in the Division of Birds since 1939; Benjamin Bridge, Auditor Emeritus, in continuous service of the Museum since 1897; David J. Conwill, Captain of the Guard, member of the Museum guard force since 1931; Henry W. Nichols,

A group of Sioux Indians, who came to the Museum to look at the Indian exhibits and the animals of the plains, attracts a following of entranced children visitors.



former Chief Curator of the Department of Geology, in the service of the Museum for fifty years until his retirement in 1944; Paul J. Warner, Preparator in the Department of Anthropology since 1937; and Albert B. Wolcott, assistant in the Division of Insects and then Assistant Curator in the Department of the N. W. Harris Public School Extension until his retirement in 1942 after thirty-four years in the service of the Museum.

VOLUNTEER WORKERS

The Museum thanks its volunteer workers for their faithful contribution of time and effort. Names of some of them are included in the List of Staff at the beginning of this Report, where they are designated by the titles Research Associate, Associate, and, in one case, The Layman Lecturer. Other volunteers in 1950, not in that list, are : *Department of Anthropology*—Miss Vivian Broman; *Department of Botany*—Miss Margaret Feigley, Dr. George D. Fuller, Philip Garrett, Floyd Swink; *Department of Geology*—Mrs. George Langford, Miss Nancy Robertson, Lloyd Soley; *Department of Zoology*—Mrs. Diane Burnett, Rodger D. Mitchell, George Moeller, Edward Palincsar, Miss Barbara Rohrke.

THE LAYMAN LECTURER

After a leave of absence of two years Paul G. Dallwig, The Layman Lecturer of the Museum, returned in November to resume his course of Sunday afternoon lectures. A new subject, "Life, What Is It," brought an avalanche of requests for reservations. Only the limitations of space in the halls of the Museum, where his lectures were conducted, prevented him from reaching far more than the average attendance of 183 for each Sunday of the month. A long waiting list at the end of the month prompted Mr. Dallwig to repeat this same lecture on the afternoons of December 23 and December 24, dates on which the Director of the Museum feared that there would be slight response. However, the attendance on these two dates totaled 341, so that the newest presentation of The Layman Lecturer actually reached 1,071 persons. The December lectures, on prehistoric man, also taxed to the limit the available space, and with real regret many applicants for tickets were refused. The sincere thanks of the Museum are extended to Paul G. Dallwig, Chicago business man who contributes his time and effort to the education and entertainment of Museum visitors.

EXPEDITIONS

The Museum had twenty-four expeditions in the field during 1950. Their work is described in this Report under the headings of the scientific departments. Expeditions of 1950 and their leaders are:

DEPARTMENT OF ANTHROPOLOGY: *Micronesia Anthropological Expedition, 1949-50*—Dr. Alexander Spoehr, Curator of Oceanic Ethnology; *Southwest Archaeological Expedition*—Dr. Paul S. Martin, Chief Curator.

DEPARTMENT OF BOTANY: *Cuba Botanical Expedition*—Dr. B. E. Dahlgren, Curator Emeritus; *European Study Trip*—Dr. Francis Drouet, Curator of Cryptogamic Botany; *Middle Central America Botanical Expedition, 1948-50*—Paul C. Standley, Curator of the Herbarium.

DEPARTMENT OF GEOLOGY: *Alabama Paleontological Field Trip*—Dr. Rainer Zangerl, Curator of Fossil Reptiles; *Eastern States Geological Field Trip*—Dr. Sharat K. Roy, Chief Curator; *Mississippi Valley Geological Field Trip*—Robert K. Wyant, Curator of Economic Geology; *Tennessee Paleobotanical Field Trip*—George Langford, Curator of Fossil Plants; *Texas Paleontological Expedition*—Bryan Patterson, Curator of Fossil Mammals; *Utah Paleontological Expedition*—Dr. Robert H. Denison, Curator of Fossil Fishes; *Wilmington (Illinois) Paleobotanical Field Trips*—Curator Langford; *Wyoming Invertebrate Paleontological Field Trip*—Eugene S. Richardson, Jr., Curator of Fossil Invertebrates.

DEPARTMENT OF ZOOLOGY: *Appalachian and Ouachita Mountains Zoological Field Trip*—Clifford H. Pope, Curator of Amphibians and Reptiles; *Arkansas Zoological Field Trip*—Colin C. Sanborn, Curator of Mammals; *Bermuda Zoological Expedition*—Dr. Fritz Haas, Curator of Lower Invertebrates; *Borneo Zoological Expedition*—D. Dwight Davis, Curator of Vertebrate Anatomy; *Colombia Zoological Expedition, 1948-51*—Philip Hershkovitz, Assistant Curator of Mammals; *Field Work for Cave Fishes*—Loren P. Woods, Curator of Fishes; *Florida Keys Fish-Collecting Trip, 1949-50*—Curator Woods; *Gulf States Zoological Field Trip*—Leon L. Walters, Taxidermist; *Texas Zoological Field Trip*—Karl P. Schmidt, Chief Curator; *United States Navy Medical Research Unit No. 3, Cairo, Egypt, 1949-51*—Harry Hoogstraal (in charge of Sudan Substation), Field Associate, Museum representative; *West Africa Zoological Expedition, 1950-51*—Harry A. Beatty, of New York.

Department of Anthropology

Research and Expeditions

Archaeological excavations in a cave were undertaken for the first time in the history of the Department of Anthropology. The cave was high up on the side of a hill in the Apache National Forest of western New Mexico. Excavations were again carried out under a permit issued to Chicago Natural History Museum by the Forest Service, United States Department of Agriculture. This research program undertaken in the Apache National Forest is one of the most exhaustive and prolonged in the record of excavation in the Southwest. The 1950 field season, the seventh, occupied the months of June to September. Dr. Paul S. Martin, Chief Curator, who was in charge of the expedition, was assisted by Dr. John B. Rinaldo, Assistant Curator of Archaeology, Dr. Ernst Antevs, Research Associate in Glacial Geology, W. T. Egan, photographer and surveyor, and James Barter and Miss Elaine Bluhm, Assistant in Archaeology, classifiers and cataloguers.

A dry cave (Tularosa Cave) was selected for field research this season because from it Chief Curator Martin and Dr. Rinaldo hoped to secure artifacts of perishable materials that could be identified as pertaining to the Mogollon culture, a relatively new culture that has been intensively studied by them during the past decade. All the materials recovered from previous digs consisted of tools of stone and bone and some pottery. Perishable materials such as clothing, basketry, vegetable products, and objects of wood and leather were lacking. And because of this lacuna, a complete story of the daily life of the Mogollon Indians could not be reconstructed.

The excavations of 1950 were more successful than had been anticipated. A total of about 2,200 specimens was recovered, not counting broken pieces of pottery and odd ends of cordage. The deposits in the cave represent a classic example of stratigraphy or the dating of layers by position. That is to say, the earliest remains were found on the floor of the cave, the latest on the surface. Since such a vast quantity of material was recovered, a detailed analysis of it has not yet been completed. A few general statements, however, may safely be made.

The earliest occupation of the cave probably took place several centuries before Christ. The first settlers were Indians who lived by gathering wild foods, who snared or hunted (with spear-thrower and spear) deer, rabbits, mountain sheep, and antelopes, and who

farmed. Corn of a somewhat primitive nature (see Department of Botany, page 43) and squash were the only crops grown by these early farmers. Somewhat later, beans were added to the crop roster, thus completing the well-known crop triad—corn, beans, and squash—known later to many of the North American Indians. The collection of vegetal materials recovered from Tularosa Cave is the largest in the New World. The art of pottery-making was unknown to these earliest cave people. The absence of this skill is significant because it was previously assumed that pottery and corn were contemporaneous in the time of their first appearance. The stone implements from the lowest or earliest level of the cave are similar to those found in Wet Leggett Canyon and reported on in the Annual Report for 1947.

Chief Curator Martin and Dr. Rinaldo conjecture that the first dwellers in Tularosa Cave were probably Indians who are called Cochise. The Cochise people wandered into the Apache Forest region from southern Arizona 1,500 or 2,000 years before Christ. Their culture is generally held to be ancestral to the Mogollon culture. In later levels of the cave the archaeologists found nearly every stage of the Mogollon culture. These later layers are dated as running from about A.D. 300 to A.D. 1200. Pottery was introduced into the area about A.D. 300, and a complete series was found: plain brown and red wares at the bottom of the deposit; these wares plus

The excavation of Tularosa Cave, Apache National Forest, western New Mexico, was the first cave project to be undertaken by the Department of Anthropology.



a decorated type, Mogollon Red-on-Brown, in the middle layers; and textured brown wares, smudged wares, and a different decorated type, Reserve Black-on-White, in the uppermost layers.

The list of perishable materials, preserved because of dry conditions in the cave, is impressive: sandals, spear-throwers of wood, spear foreshafts, bows and arrows, snares, rabbit nets, digging sticks for planting corn, rush mats, cradles, whistles or flutes, fragments of cotton textile, fur and feather blankets, aprons or "skirts" made of cotton(?) strings, bags made from animal skins, tobacco pipes, reed-cigarette butts, wooden spoons, ceremonial prayer sticks, hair nets, baskets, cloth bags, cordage, fetishes, and a medicine man's bag containing herbs and paraphernalia. In an early level, which is dated at about A.D. 600 or A.D. 700, were found the remains of two desiccated adults. These had been placed intentionally in burial pits.

A brief analysis of the materials by levels (that is, by the different periods of time involved) shows clearly that there were styles in types of sandals and basketry, in the tools of bone and stone, and in types of pottery and that these styles changed from time to time. For example, in the earliest layer were found wickerwork sandals (2 to 4 warp, over-one, under-one weave) made of coarse yucca leaves. In the latest layer that type of sandal had been replaced by one of a plaited or twilled weave with a herringbone effect.

The 1950 excavations show that Tularosa Cave was occupied for about two thousand years. The materials that were recovered are new in the sense that they represent the first perishable specimens surely identified with the Mogollon culture. When the results of this work are published, students will have at their disposal an unparalleled series of articles used in daily life by the Mogollon Indians. It will then be possible to make conjectures and inferences not now possible. John W. Moyer, staff cinematographer, spent three weeks with the expedition making documentary films in color of the excavations in the cave and of other archaeological features, all of which will be incorporated into a unified film-story.

Dr. Antevs, while with the expedition, continued climatological studies of Pine Lawn Valley. When working in Wet Leggett Canyon, where the earliest remains of man in the Valley have been discovered, he found an ancient hearth. Charcoal from this hearth was sent to the carbon-14 project of the Institute for Nuclear Studies, University of Chicago. Dr. Willard F. Libby, in charge of the project, processed this charcoal and assigned to it a date of 4,508 years ago ± 680 years. This means that Pine Lawn Valley was inhabited

about 2000 B.C. or 3000 B.C. This carbon-14 date is very close to the estimated dates of 3000 B.C. to 1500 B.C. made several years ago by Dr. Antevs on the basis of his climatic sequences. Whether the earliest layer in Tularosa Cave, excavated in 1950, will also date at about 2000 B.C. is not yet determined.

In August the Museum Press issued *Turkey Foot Ridge, A Mogollon Village, Pine Lawn Valley, Western New Mexico* and, in October, *Sites of the Reserve Phase, Pine Lawn Valley, Western New Mexico*. These reports, written by Chief Curator Martin and Dr. Rinaldo, present in detail the results of archaeological field work in the seasons of 1948 and 1949. *Sites of the Reserve Phase* contains a conjectural section on the social organization of the Mogollon Indians who inhabited Pine Lawn Valley in ancient times. This chapter is an effort to interpret raw data (such as location of house sites, kind and number of houses per period) in order to see if they would lead to probable inferences concerning social organization and culture growth. The authors have thus, in an effort to emphasize interpretation as an important part of archaeological work, proceeded one step beyond the mere presentation of raw data.

Until November Dr. Alexander Spoehr, Curator of Oceanic Ethnology, was absent from the Museum on a year's program of field work in the Mariana Islands, Micronesia. The expedition to the Marianas was financed and conducted by the Museum but it was arranged and sponsored by the Pacific Science Board of the National Research Council, which has acted as a clearing agency for scientific field projects in Micronesia. The work of the expedition was also actively assisted by the Navy Department. Headquarters of the expedition were maintained on Saipan, from which periodic visits were made to Tinian, Rota, and Guam.

The objectives of the expedition were twofold: (a) an archaeological project, designed to investigate the prehistory of the Mariana Islands, and (b) an ethnological project, whose purpose was to examine the processes of change operative in the contemporary culture of the present inhabitants. For the student of prehistory in the Pacific the Mariana Islands hold particular interest because they represent the farthest penetration of rice agriculture into the Pacific from its Asiatic source while they also lie in the Oceanic pottery-making area. Pottery, because it is very sensitive to innovation and change, is a mainstay of the archaeologist in reconstructing sequences of cultural development. The Marianas therefore present important possibilities in unraveling the story of man's past in this corner of the Pacific world.



Archaeological excavations are begun at one of the prehistoric sites on Saipan in the Mariana Islands by the Anthropological Expedition to Micronesia, 1949-50.

The archaeological work of the expedition was concentrated on Saipan and Tinian. A thorough survey was first made of the archaeological sites on the two islands. Although it was found that prewar Japanese agricultural operations, followed by the destruction caused by the World War II invasion of Saipan and Tinian and their use as American bases, had destroyed a great many archaeological sites, enough remained so that a series of sites could be selected for excavation. The most important of these sites belonged to the Marianas *latte* period (*latte* is the local name given to prehistoric stone columns, which are in actuality the foundation pillars of ancient houses). A number of *latte* sites were carefully mapped and dug, and the characteristics of the culture pattern of this period, as expressed in stone, bone, shell, and pottery artifacts, were delineated. From documentary sources we know that this *latte* culture endured until the time of the first contact with the Spanish. How long a time-span the entire period covered remains conjectural; after the materials recovered by the expedition have been fully studied, we may be able to state a reliable approximation.

In any case, the expedition did unearth artifacts that preceded the *latte* culture in time and that strongly suggest that man was established in the Marianas at least 750 to 1,000 years ago.

Following the completion of the archaeological work on Saipan and Tinian, Curator Spoehr made a brief archaeological survey of Rota, the most promising remaining island in the southern Marianas for archaeological work. In October, through the assistance of the Navy Department, he was also enabled to conduct a survey of the Palau Islands, which lie at the southwestern corner of Micronesia and which form the probable funnel through which passed the migrations into Polynesia and Micronesia. Curator Spoehr was able to ascertain the characteristics of the principal types of sites in the Palaus, as well as to determine the conditions of field work.

The ethnological project of the expedition was concentrated on Saipan, with brief periods of work on Tinian and Rota. The focus of interest was the Chamorro and Carolinian inhabitants of Saipan. The Chamorros, as the natives of the Marianas are called, are a Europeanized group that developed a stable hybrid culture in the eighteenth and nineteenth centuries, when they existed under Spanish domination. The Carolinians are a small ethnic minority that migrated to Saipan from the Carolines during the nineteenth century. Both Chamorros and Carolinians have been subjected to the pressures of culture change wrought by successive Spanish, German, Japanese, and American administrations, while during World War II the invasion of Saipan completely destroyed their homes and possessions and seriously disrupted their lives. How this community is re-forming today, the areas of its culture that present either marked stability or marked instability, and the underlying processes of culture change operative in the present situation formed the principal fields of examination. The results of the ethnological project as well as of the archaeological study will be published by the Museum at a later date.

During the year Donald Collier, Curator of South American Ethnology and Archaeology, continued work on the collection excavated by the 1946 Archaeological Expedition to Peru. He made a study of Huari-style ceramics in the Museum's collection of pottery from the south highlands of Peru, an extension of the study of the important Tiahuanaco-period site of Huari near Ayacucho that was investigated during the 1946 expedition (see page 83). He also made an inventory of wooden specimens in the collections from early Peruvian cultures in order to select suitable samples for carbon-14 dating, and two Early Nazca samples were chosen and

submitted to Dr. Libby. The dates obtained show the Early Nazca culture to be about two thousand years old. A similar survey was made of the Paleolithic collection for suitable antler samples. Curator Collier supervised an intensive study by Miss Vivian Broman, a volunteer, of the Mexican and Mayan archaeological collections. The purpose of this study was to place all of the materials in the new cultural groupings and time phases developed in Middle American archaeology during the past fifteen years. Miss Broman produced an extensive descriptive outline and inventory that will be invaluable when the Hall of Mexican Archaeology (Hall 8) is revised. This revision may be possible after consummation of the exchange of collections with the National Museum of Anthropology in Mexico City, which will fill many gaps in our Mexican archaeological collection. Curator Collier devoted considerable time to supervision of the packing of the collection to be sent to Mexico from this Museum. It is hoped that the exchange will be completed within a short time.

Dr. A. L. Kroeber, Research Associate in American Archaeology, began a study, to be published by the Museum, of material of the Early Lima period excavated by him during the Museum's 1926 Archaeological Expedition to Peru. To facilitate this study Curator Collier went over this collection, shipped type specimens to Dr. Kroeber in New York, furnished data from the catalogue, and supervised the photographing of specimens.

Dr. Wilfrid D. Hambly, Curator of African Ethnology, continued his research in craniometry and brought to completion a work entitled "Cranimetry of Malekula and New Caledonia," one of a series that will eventually cover a wide field of research on the Museum collection of five hundred crania from Melanesia. The volumes published by the Museum to date are *Cranimetry of New Guinea*, *Cranimetry of Ambrym Island*, and *Cranial Capacities, A Study in Methods*.

George I. Quimby, Curator of Exhibits, conducted research in North American ethnology in connection with the exhibition program and undertook research on the archaeology of the lower Mississippi Valley preparatory to completing portions of reports dealing with the Plaquemine and Natchezan culture periods. Considerable progress was made on a report of the Bayou Goula site in Iberville Parish, Louisiana, where a Plaquemine period ceremonial center consisting of a plaza and temple mounds was overlaid by a historic Natchezan-period fortified village that was successively occupied by the Bayougoula, Quinipissa, Acolapissa, Tiou, Taensa, and Houma.

Some research time was devoted to the subject of silver ornaments made for trade with Indians in the seventeenth and eighteenth centuries. A report on trade silver is in preparation.

During the first months of the year Dr. Rinaldo collaborated with Chief Curator Martin in preparing a report on the excavations during the summer of 1949 of three Indian ruins located in Pine Lawn Valley of west-central New Mexico. He prepared a series of graphs illustrating the increase in population density in the Mogollon area from A.D. 500 to A.D. 1050 and other illustrations for this report. In July the Museum Press issued *An Analysis of Culture Change in the Ackmen-Lowry Area* by Dr. Rinaldo, an analysis of trends and rates of change in the culture of the prehistoric Pueblo Indians of southwestern Colorado. He continued research on and cataloguing of the extensive Herzfeld collection of Near Eastern antiquities. During the summer he assisted Chief Curator Martin in the excavation of three caves formerly occupied by the Indians in west-central New Mexico and, after his return from the field in the fall, made a detailed analysis of the pottery and stone and bone artifacts from the summer's excavations preliminary to the preparation of a report on the season's field work. He collaborated with Chief Curator Martin in preparation of a paper on "The Southwestern Co-Tradition," a study of developments in common among the prehistoric Indian cultures of the Southwest.

Accessions—Anthropology

More than 2,000 artifacts were obtained by the 1950 Southwest Archaeological Expedition. The most valuable and significant of these are the sandals, basketry, cloth, bows, arrows, darts, and prayer sticks because they are the only specimens of such perishable materials that have been recovered from sites of the prehistoric Mogollon Indians. These unique materials are now being classified and studied. In addition, corn on the cob and corncobs were found in abundance, some of which is the earliest yet discovered. The 1949-50 Anthropological Expedition to Micronesia returned with an archaeological collection consisting of about 500 pieces. Stone, bone, and shell tools and ornaments and some very early and some rare pottery were recovered from surveys and excavations on Saipan, Tinian, and Rota in the Mariana Islands. These materials are now being studied, preparatory to publication of the results of the work of the expedition to Micronesia.

Exhibits—Anthropology

Under the direction of Curator of Exhibits Quimby thirty-five new exhibits (including six dioramas) were completed during the year for Mary D. Sturges Hall (Hall 5) by Alfred Lee Rowell, Dioramist, and Gustaf Dalstrom, Artist, with the assistance of Walter C. Reese, Preparator, and John Pletinckx, Ceramic Restorer. The new exhibits were planned by the curatorial staff of the Department of Anthropology to show the culture of historic Indians (ethnology) of the woodlands and prairies of eastern North America. The hall, which will contain, when complete, fifty-nine exhibits (including seven dioramas), is divided into seven sections: Indians of the Eastern Prairies, Indians of the Western Prairies, Indians of the Southern Prairies, Indians of the Northern Woodlands, Indians of the Southern Woodlands, Indians of the Eastern Woodlands, and Indians of the Chicago Region of the Central Woodlands. Eighteen exhibits were completed for the hall in 1949, and, with the addition of six exhibits in 1951, the hall will be open to the public.

"Pawnee Thunder Ceremony" will be shown in Hall 5 (Woodland and Prairie Indians).



Department of Botany

Research and Expeditions

During the year Paul C. Standley, Curator of the Herbarium, continued his expedition to middle Central America, exploring mainly in Honduras. In the early summer he returned for a brief stay at the Museum, where he identified many of his collections. He was in residence in Honduras at the Escuela Agrícola Panamericana, near Tegucigalpa, and from there he made numerous collecting trips to the departments of Morazán and El Paraíso, which continue to furnish many new species of plants and others new to middle Central America. In January and February he collected in the department of Intibucá in the vicinity of La Esperanza and Intibucá, the highest large towns of Honduras, a region that yielded many plants previously unknown south of Guatemala; in October he spent two weeks about Pespire, in the department of Choluteca near the Pacific coast; and in December he collected about Nueva Ocotepeque, near the point where El Salvador, Honduras, and Guatemala meet. These three regions had never been visited before by a botanist. Curator Standley has now visited all the departments of Honduras for botanical exploration, but vast areas of the country have never yet been seen by any botanist. During the year he made more than three thousand collections of flowering plants and cryptogams.

Dr. B. E. Dahlgren, Curator Emeritus, continued his studies of American palms and collected for several months in Cuba. Dr. Theodor Just, Chief Curator, studied fossil Cycadaceae and Mesozoic plant microfossils as well as the fossil floras of the southern hemisphere. J. Francis Macbride, Curator of Peruvian Botany, carried on studies of the flora of Peru at various herbaria in California. Dr. Earl E. Sherff, Research Associate in Systematic Botany, continued his studies of Hawaiian plants, particularly the genus *Noto-trichium* and related plants such as pigweed, celosia, and coxcomb, and carried on monographic studies of various genera of *Compositae* for publication in "North American Flora." Llewelyn Williams, Associate in Forest Products, spent the greater part of the year in the Far East, studying forest products in various countries and collecting woods for exhibition purposes.

Dr. Hugh C. Cutler, Curator of Economic Botany, spent March and April in Cuba assisting Curator Emeritus Dahlgren with the Cuban palm project. During the remainder of the year he made a study of native American food plants and their wild relatives,



Corn from Tularosa Cave, New Mexico. The three lower ears are pod corn, which is believed to be similar to the kind of corn from which modern corn was developed. These ears came from the deepest (earliest) levels of the cave. The eight ears above, from an upper (more recent) level, show greater development and variation.

based on collections by Museum expeditions and on a large loan collection of Peruvian archaeological material made by Dr. Junius Bird, of the American Museum of Natural History. In order to provide reliable material for comparison, a collection of all available legumes used for food was grown near Chicago during the summer. After July Curator Cutler was engaged in research on plant materials recovered from Tularosa Cave by the Museum's 1950 Southwest Archaeological Expedition. The excavated material is in amount, condition, and diversity of cultivated plant material the best collection that has ever been made. Of most interest is the corn, com-

prising about thirty-eight thousand cobs, fragments, and a few ears complete with grains and husks. Some of the corn, the most primitive yet unearthed, is believed to be the oldest corn yet discovered. The study of this valuable collection is expected to require at least another year.

Dr. Julian A. Steyermark, Associate Curator of the Herbarium, continued the study of his collections from Venezuela and Ecuador and those from Venezuela made by Associate Williams. Associate Curator Steyermark's collections from Venezuela continued to yield a large proportion of species new to science as well as numerous records of plants previously unknown from that country. The report on new species from Venezuela, prepared by Associate Curator Steyermark and many specialists, is soon to be issued by the Museum. Many of these Venezuelan collections represent important additions to our knowledge of plant geography and have yielded valuable information on plant evolution and endemism. The proportion of species new to science collected by him is higher than that resulting from any previous expedition sponsored by the Museum. It is hoped that future expeditions will be made in order to bring forth additional botanical novelties.

A number of field trips to Missouri were made by Associate Curator Steyermark in connection with his work as Research Associate of Missouri Botanical Garden. Important new herbarium collections were made that throw new light on the ranges of eastern and southern species in the United States, and several virgin forests and a virgin prairie in the heart of the Ozarks, previously uncollected, yielded valuable botanical data. One of the rarest plants in North America, *Geocarpon minimum*, was rediscovered by him in company with its original collector, E. J. Palmer, in Jasper County, southwestern Missouri. Results of a reinvestigation (see page 84) showed that the genus had been misplaced in the *Aizoaceae*, the family to which it had previously and rather uncertainly been referred, and instead should be placed in the *Caryophyllaceae*. In addition Associate Curator Steyermark spent considerable time identifying numerous collections that were sent in for determination from the United States, Mexico, and Central and South America. Special attention was given to certain families, such as the *Rubiaceae*, *Euphorbiaceae*, *Lentibulariaceae*, and *Compositae*.

Work was begun in the summer on the separation of type specimens from the regular mounted herbarium sheets. This is being done in order to make these important specimens upon which the concept of the species is based readily available to workers as well

as immediately accessible for evacuation in case of fire or emergencies brought on by the contingencies of war. Type specimens are the most valuable specimens a herbarium possesses, and they must be saved at all cost. The Museum possesses a splendid collection of such specimens, especially from Central and South America.

During 1950, as the year before, many specimens sent to the Museum by collectors and various institutions were identified by Dr. José Cuatrecasas, Curator of Colombian Botany. Of these the most important collections are those of Woytkowski, Yepes, Castañeda, Schultes, Patiño, Daniel, Uribe-Uribe, Sneider, Brother Apolinar-María, Facultad Agronomía Medellín, Acosta Solís, Espinosa, Paredes from Ecuador, Cárdenas from Bolivia, and Leon from Costa Rica. Loans received for naming from other institutions (United States National Herbarium, New York Botanical Garden, Gray Herbarium, and University of California) were identified by Curator Cuatrecasas, chiefly collections of Andean *Compositae*, *Cunoniaceae*, *Rosaceae*, *Guttiferae*, *Bombacaceae*, *Moraceae*, *Tiliaceae*, and *Sterculiaceae*. Approximately four thousand specimens of such collections and special groups were thus named.

In addition Curator Cuatrecasas identified or described as new many species in his large collection of Colombian plants, containing more than twenty-four thousand numbers of phanerogams, many of which are accompanied by wood and bark samples of undescribed trees. Because many groups found in tropical America are incompletely known or specimens often come from previously unexplored areas, much research and critical work must be done in order to identify such a collection, including extensive studies of type collections in American and European herbaria, and descriptions of new species must be prepared before studies of a more general character can be undertaken. This fundamental taxonomic work must be supplemented by data obtained from material deposited in other American and European herbaria in preparation of a critical catalogue of all species of flowering plants found in Colombia, which will be the basis of a descriptive flora of Colombia and of future studies on plant distribution and ecology. Because of the special geographical position of Colombia this catalogue of its flora will be of great use to all those interested in the biogeography of other South and Central American countries. The flora of Colombia is estimated to contain around twenty-five thousand species or more than ten times the number of species found in Illinois. Work on this catalogue will be started in 1951 under the auspices of the John Simon Guggenheim Memorial Foundation of New York.



This desert scene near Tucson, Arizona, appears in a recent Museum publication, "Natural Landscapes of the United States," by J. Francis Macbride (Popular Series).

Dr. Francis Drouet, Curator of Cryptogamic Botany, spent most of the year in naming specimens of algae received from many sources and in curating the collections of cryptogams. In April he left for four months of study of types of microscopic algae in European herbaria, a project made possible with funds provided by Elmer J. Richards, of Chicago. Visits were made at the British Museum (Natural History), Royal Botanic Gardens at Kew, Linnean Society of London, University of Birmingham, Muséum d'Histoire Naturelle in Paris, Conservatoire Botanique in Geneva, University of Geneva, Eidgenössische Technische Hochschule in Zurich, University of

Zurich, University of Vienna, Natural History Museum in Vienna, the private collections of the de Toni family in Brescia, Rijksherbarium in Leiden, Botanical Museum in Copenhagen, University of Lund, Natural History Museum in Stockholm, University of Uppsala, and the Botanical Museum in Oslo.

This project was in continuation of work on a revision of the coccoid blue-green algae being carried on in collaboration with William A. Daily, of Butler University. Mr. and Mrs. Daily spent some days at the Museum during the year studying the collections of Myxophyceae and Characeae. Dr. Hanford Tiffany and Donald Richards, Research Associates, continued work on the cryptogams, the latter taking charge of the collections during the absence of Curator Drouet. Miss Margaret Feigley, volunteer worker, identified large numbers of bryophytes. Dr. Maxwell S. Doty and Miss Dorothy E. Fensholt, of Northwestern University, made considerable use of the collections of algae in their research.

Under the direction of Mrs. Effie M. Schugman more than thirteen thousand specimens and photographs of cryptogams were mounted on sheets. These were filed in the herbarium cases by Curator Drouet. More than three thousand duplicate cryptogams were distributed to other institutions and individuals in exchanges. Approximately thirty-six thousand specimens and type photographs were mounted and distributed in the phanerogamic herbarium. More than eight thousand specimens of ferns and flowering plants were sent in exchange to other institutions and individuals. From its large collections of negatives of type and historical specimens of American plants in European herbaria the Department of Botany sold and sent in exchange during the year more than six thousand prints to other institutions and to botanists for study purposes.

Accessions—Botany

Several important additions to the phanerogamic herbarium were made during the year. The most noteworthy of these are: the herbarium of Johns Hopkins University containing more than 7,000 ferns and flowering plants and about 2,600 cryptogams (received as a gift through the efforts of Chief Curator Just); 2,788 plant specimens from Dr. William C. Ohlendorf (gift); 1,987 plants of Hawaii from Research Associate Sherff (gift); 1,874 plant specimens from the University of Illinois, Chicago (gift); 2,300 plant specimens of southern Mexico from Dr. Margery Carlson (purchase); 1,256 type photographs from the Museo Nacional de Historia Natural,

Santiago, Chile (exchange); 5,164 plant specimens from the Escuela Agrícola Panamericana, Tegucigalpa, Honduras (exchange); 3,755 plant specimens of Europe and Paraguay from Missouri Botanical Garden (exchange); 1,077 plant specimens of South Africa and Lower California from the University of California (exchange); and 1,617 plant specimens of Sweden from Naturhistoriska Riksmuseet, Stockholm, collected by Dr. Gunnar Samuelsson (exchange). In addition to material collected on Museum expeditions more than 13,000 cryptogams were accessioned, of which some 3,000 were purchased with the Donald Richards Fund. An important addition to both the phanerogamic and cryptogamic herbaria was made by the Middle Central America Botanical Expedition of 1948-50 with the accessioning of 30,000 plants collected by Curator Standley. Forty wood specimens were received as a gift from the Natural Resources Section, Division of Forestry, San Francisco.

Exhibits—Botany

A noteworthy addition to the synoptic exhibit of flowering plant families in Martin A. and Carrie Ryerson Hall (Hall 29, Life Plant) is a reproduction of a ginger lily (*Hedychium Gardnerianum*) from India, a showy member of the Ginger family with fragrant golden yellow flowers in large terminal spikes. A flowering stem of powdery thalia, a tall aquatic or marsh herb native of semitropical America, was added during the year to the adjacent exhibit of the Arrowroot family (*Marantaceae*). Both models were made by Emil Sella, Curator of Exhibits, with the assistance of Samuel H. Grove, Jr., Artist-Preparator, and Frank Boryca, Preparator. Real progress was made in the rearrangement and reconditioning of the exhibits in Hall 29. A total of thirty-four families was reinstalled, in some instances partial restoration being necessary. Two exhibition cases were rebuilt by Preparator Mathias Dones to provide greater depth. In Charles F. Millsbaugh Hall (Hall 26, North American Trees) several new reproductions were installed. Of these, branches of red ash (*Fraxinus*), sugar maple (*Acer*), white oak (*Quercus*), American elm (*Ulmus*), and hackberry (*Celtis*) were prepared by Artist-Preparator Milton Copulos and Preparator Boryca. Included in the series is a branch of wild black cherry (*Prunus*) assembled by Artist-Preparator Grove. Collecting of suitable living material for the preparation of these exhibits was facilitated by the generous assistance of Clarence E. Godshalk, Director, and E. Lowell Kammerer, Arboriculturist, of the Morton Arboretum.

Department of Geology

Research and Expeditions

In conjunction with the studies of meteorites, Robert K. Wyant, Curator of Economic Geology, made detailed quantitative chemical analyses of one iron (Smithonia) and three stone (Pantar, Paragould, and Potter) meteorites and determined the mineralogical composition of the stone meteorites from the bulk chemical analyses. He also made physical and chemical examinations of forty-seven carbonate and silicate rocks from the Museum's collections. In collaboration with Curator Wyant, Dr. Sharat K. Roy, Chief Curator, completed the descriptive, metallographical, and petrographical studies of the four meteorites and made further studies of the Benld and La Porte meteorites. The results of the studies of La Porte and Smithonia were published by the Museum during the year. Papers on the other four meteorites will be ready for the press early in 1951.

The exciting discovery of Early Cretaceous mammals in northern Texas in November, 1949, by a Museum party was made known in last year's Annual Report. Since then Bryan Patterson, Curator of Fossil Mammals, has completed a paper on the specimens collected, which has been scheduled to appear early in 1951. In addition, Curator Patterson continued his work on the latest Eocene or earliest Oligocene mammals of trans-Pecos Texas. He also completed the first draft of a paper with Dr. Albert Elmer Wood, of Amherst College, on the earliest South American Tertiary rodents. Curator Patterson's studies on the auditory regions of the edentates, in collaboration with Dr. Walter Segall, of Northwestern University, have progressed satisfactorily during the year. Dr. Rainer Zangerl, Curator of Fossil Reptiles, worked primarily on a revision of the turtles of the family Toxochelyidae, a complicated, time-consuming undertaking that is now nearing completion. Curator Zangerl also continued his studies on the comparative morphology of the turtle shell and on the reclassification of this order of reptiles.

Dr. Robert H. Denison, Curator of Fossil Fishes, continued his study of the Late Devonian fresh-water fishes of the Rocky Mountain states. Work on the armored placoderm *Bothriolepis* has been completed, and the various lobe-finned fishes and lung fishes that inhabited the same streams and estuaries are now occupying his attention. In addition Curator Denison has prepared a large portion of the Early Devonian fishes from Utah and has begun a study of one of the groups of jawless ostracoderms, the Heterostraci.



George Langford, Curator of Fossil Plants, collects plant nodules near Wilmington.

Eugene S. Richardson, Jr., Curator of Fossil Invertebrates, has been occupied chiefly in identifying, checking, and selecting specimens for the new exhibits of invertebrate fossils and fossil plants for Frederick J. V. Skiff Hall (Hall 37, Fossil Invertebrates and Fossil Plants). He also spent considerable time writing the general labels and case headings for these exhibits. Several months were devoted to reidentifying and checking the specimens purchased from the Hovey Museum at Wabash College. He also identified the fossils collected in 1949 from the Ordovician and Devonian rocks of New York by Chief Curator Roy.

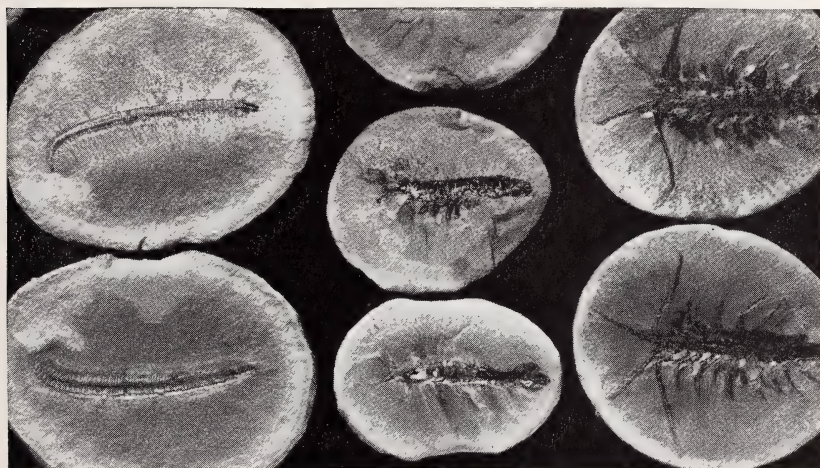
George Langford, Curator of Fossil Plants, who for the past several years has been engaged in preparing a comprehensive account of the flora and fauna of the Pennsylvanian deposits near Wilmington, Will County, Illinois, completed his manuscript early this year. It consists of the descriptions and illustrations of 550 species of fossil plants and 110 species of the fauna, chiefly invertebrates. This

may be regarded as a remarkable total to be recovered from a single deposit. Since completing his monograph, Curator Langford has been busy identifying the Mesozoic and Cenozoic fossil plants recently collected in the Gulf region.

Curators Patterson and Zangerl conducted an expedition, undertaken in collaboration with the Texas Memorial Museum, to northern Texas during April, May, and June. Curator Zangerl carried out a general survey of the Early Cretaceous Trinity Group in that region, while Curator Patterson concentrated his work at the locality from which mammals had been obtained in 1949. The remains of the mammals and of the infinitely more numerous fishes, amphibians, and reptiles occur sporadically in a bed of poorly consolidated sand some twelve to eighteen inches thick. The sand breaks down readily in water and it was therefore decided to attempt washing operations on a fairly large scale.

Some sorting of the coarsest grade was possible in the field, but the finer grades had to be brought back to the Museum and sorted under a binocular microscope in the laboratory, a task that is still in progress. It proved possible to process some tons of sand by this means. Several specimens of the extremely rare mammals were detected in the field and additional fragments have since been found in the laboratory, together with gratifying numbers of frogs and lizards. The majority of the mammals are triconodonts of the same

Among the fossil plant specimens collected near Wilmington, Illinois, were found a few relatively rare scorpions, spiders, myriapods, and shrimp-like arthropods.



species as those found in 1949, but at least one, regrettably very incomplete, appears to be referable to the group from which it is believed nearly all living mammals have descended.

Curator Zangerl left for Alabama during the latter part of August to complete the excavation of a large sea turtle, previously discovered and partially collected by Allan Hard, of Tuscaloosa, Alabama, and Robert Hard of Flint, Michigan. Curator Denison made a return visit to northeastern Utah to obtain a more complete collection of the Early Devonian fish fauna of the Water Canyon formation. He was assisted in the field by William D. Turnbull, Preparator, and Mrs. Turnbull, Assistant in Fossil Vertebrates, and for part of the time by Curator Patterson. Partial preparation of the specimens collected reveals that there is a wide variety of ostracoderms, placoderms, and acanthodians as well as certain of the earliest lobe-finned fishes and lung fishes. The material collected not only will add substantially to the present collection of primitive fishes but also will furnish additional information regarding the anatomy of these early vertebrates.

Curator Langford made several short trips to the Pennsylvanian deposits near Wilmington, Illinois, and two trips totaling three weeks to the Mesozoic and Cenozoic formations of the Gulf regions (western Tennessee and northern Mississippi). The purpose of these trips was chiefly to collect fossil plants, and Curator Langford, a veteran collector, has been most successful in his efforts to enrich the present collection. Curator Richardson spent a month in the West doing reconnaissance work and collecting trilobites and hyolithids in the Cambrian Gros Ventre shale of Wyoming. During the month of May Curator Wyant visited several mining districts in southern and northwestern Illinois and southeastern Missouri and made a representative collection from each locality. He also collected, from the areas adjacent to these mining districts, those rock types that were not represented in the Museum's lithological collection.

Exhibits—Geology

During 1950 a total of twenty-nine new exhibits and three restoration groups were completed. Seventeen exhibits and three restoration groups dealing with the life and geologic events of the earth's history from Pre-Cambrian time through the Ice Age were installed in the new Hall of Fossil Invertebrates and Fossil Plants (Hall 37, Frederick J. V. Skiff Hall). The restoration groups are the work of George Marchand, a noted sculptor-artist of Ebenezzer, New York.

All other work in this hall was done under the able direction of Curator Richardson and Harry E. Changnon, Curator of Exhibits, with the assistance of Preparators Henry Horback and Henry U. Taylor. Hall 37 is not yet complete, but plans call for its completion in July, 1951.

Three new exhibits devoted to amphibians and primitive reptiles were installed in Ernest R. Graham Hall (Hall 38, Fossil Vertebrates). These exhibits illustrate, among other things, the evolution of limbs from fins and the diversity of form attained by amphibians. They also demonstrate the advances of the reptilian egg over the amphibian, which made true land-life possible, and display the evolutionary radiation of the reptiles. Reptilian radiation is illustrated by means of a series of reconstruction models executed by Artist Joseph B. Krstolich, of the Department of Zoology. Other models, the mounting of the skeletons, and the installation of the cases were the work of Chief Preparator Orville L. Gilpin and Preparators Turnbull and Stanley Kuczek. Nine new exhibits are on display in the Hall of Economic Geology (Hall 36).

Accessions—Geology

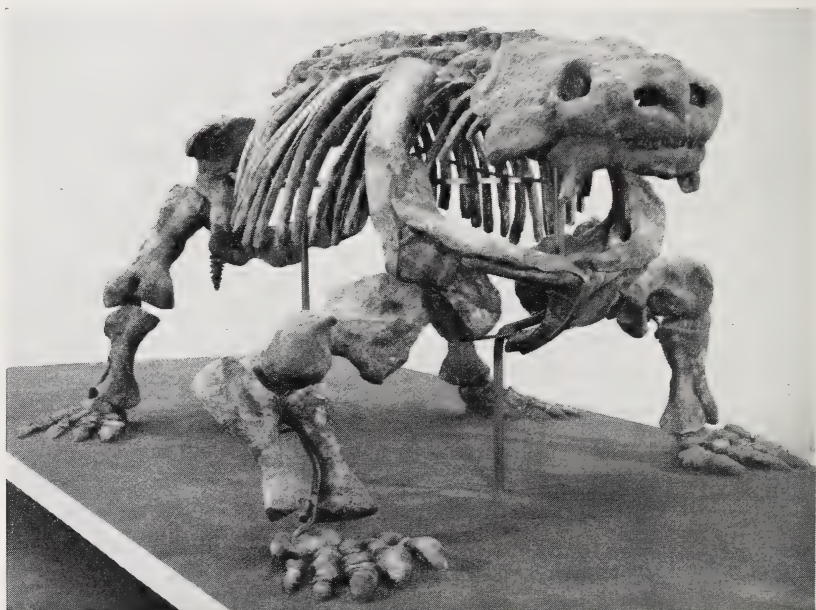
The largest new accession of fossil invertebrates this year was the collection of the Hovey Museum, obtained by purchase from Wabash College, Crawfordsville, Indiana. This collection, which was brought together about eighty years ago, includes a great many fine specimens from classic collecting localities no longer accessible. For example, there are 208 lots of Mississippian crinoids, chiefly from Crawfordsville, a locality renowned for the many complete crinoid heads collected there in the past. The specimens are painstakingly prepared. To assemble a similar collection today, even were the specimens still readily available, would require the services of a collector for several months and of a skilled preparator for more than a year. Another noteworthy addition to the fossil invertebrate collection, made by exchange with the University of Michigan, was 32 lots of Devonian corals, bryozoans, and brachiopods.

In addition to the fossil vertebrate material collected by Museum expeditions, a number of specimens were obtained by gift, exchange, or purchase. The University of Chicago donated a number of specimens of Permian fish, amphibians, and reptiles, collected in Texas by Dr. Everett C. Olson, Research Associate in Fossil Vertebrates. Allen M. Hard and Robert H. Hard presented turtle fragments from the Cretaceous deposits of Alabama, the University of Ten-

nessee a cast of a fossil turtle, and the Provincial Museum of Saskatchewan a lower jaw of the Oligocene rhinoceros *Hyracodon*. By exchange Early Devonian fish were obtained from Dartmouth College Museum and a skeleton of the Triassic reptile *Trilophosaurus* from Texas Memorial Museum. The collection of the Hovey Museum contains a series of fossil vertebrates, chiefly mammals, and includes type and figured specimens featured in the work of Dr. Joseph Leidy, one of the founding fathers of American vertebrate paleontology. The Museum was again fortunate to record a valuable gift of 950 fossil plants from Dr. and Mrs. R. H. Whitfield, Associates in Fossil Plants, and their son, Jon S. Whitfield.

In economic geology the more interesting additions from sources other than the Museum's collecting include gifts of 140 rocks and ores from the Colombian government and a large group of dolomite sand crystals from Morgan Davis, Director of the Humble Oil Company. The Colombian specimens, which were exhibited at the International Trade Fair in Chicago, form an excellent representation of the economic geology of Colombia.

This fine skeleton of *Bradysaurus baini*, a sizable pareiasaur reptile from the Karroo Formation of South Africa, was lately remounted and installed in Hall 38.



Department of Zoology

Research and Expeditions

In the Division of Mammals Curator Colin C. Sanborn continued research on mammals (chiefly bats) from various parts of the world, especially those represented in the rich material newly received from South America and Africa. Frank C. Wonder, Taxidermist, was engaged for most of the year in the preparation and reconditioning of study skins. In the Division of Birds Dr. Austin L. Rand, Curator, was occupied with studies of the taxonomy of Old World birds, the distribution of birds of the Yukon, the anatomy of certain shore birds from Asia and America, the moult of the cassowary, social behavior in birds, and the habits of the peculiar Madagascan birds of the family Nesoenatidae. The acquisition of the notable van Someren Collection of East African birds lays a foundation for effective further researches in African ornithology. Emmet R. Blake, Associate Curator, prepared material on birds of British Guiana for technical publication and did essential background research for a semipopular book on Mexican birds. Melvin A. Traylor, Jr., Research Associate, studied Peruvian and Paraguayan birds and aided Curator Rand in preliminary studies of birds of El Salvador. In addition to her work with exhibits Mrs. Ellen T. Smith, Associate, carried on considerable curatorial work.

In the Division of Reptiles Clifford H. Pope, Curator of Amphibians and Reptiles, continued his detailed study of North American salamanders. He returned to his interest in the striking of venomous snakes and, aided by Jay B. Leviton, made high-speed electronic flash photographs of striking rattlesnakes. In connection with research on African reptiles Curator Pope visited the Museum of Comparative Zoology, Harvard University, for several weeks in July for consultation with Arthur Loveridge. Robert F. Inger, Assistant Curator of Fishes, continued his study of amphibians of the Philippines, in which he was engaged before his transfer from the Division of Reptiles. While at the University of Frankfurt in Frankfurt-on-Main, Germany, as member of the faculty exchange group from the University of Chicago, Karl P. Schmidt, Chief Curator, was able to advance the manuscript of the sixth edition of *Checklist of North American Amphibians and Reptiles*.

In the Division of Fishes Curator Loren P. Woods continued his work on the supplementary volume for the Museum's extremely useful three-volume work, *The Marine Fishes of Panama*. The

receipt of a collection of fishes from the edge of the continental shelf in the Gulf of Mexico, through the co-operation of Dr. Hurst Shoemaker, of the University of Illinois, greatly stimulated his studies of the fishes of the Gulf region, with emphasis on a revision of the damsel fishes, family Pomacentridae. Robert Kanazawa, Assistant before his departure to a position in the United States National Museum, studied conger eels and the available material of African fishes, in which he found an interesting new genus of cichlids. Mrs. Marion Grey, Associate, completed the description of three new species of deep-sea fishes collected in the course of the Bermuda Deep-Sea Expedition of 1948. In the Division of Vertebrate Anatomy Curator D. Dwight Davis, after his return from Borneo, resumed his studies of the anatomy of the Carnivora, grouped around his research toward a monograph on the giant panda. Dr. R. M. Strong, Research Associate, continued his studies of the anatomy of the mud-puppy *Necturus*.

The time for research salvaged from their increasing curatorial duties in the Division of Insects was used by Rupert L. Wenzel and Henry S. Dybas, Assistant Curators, in studies respectively of the beetle families Histeridae and Ptiliidae. Assistant Curator Wenzel spent several weeks early in the year in the examination of types and in other studies of histerid beetles at eastern museums. As in former years Research Associate Charles H. Seevers devoted spare time to study of the rove-beetles or Staphylinidae and contributed much time to the arrangement of the collections. Eugene Ray, of Wells High School, Chicago, temporary assistant at the Museum during the summer, gave his attention to the family Mordellidae, on which he has published a number of papers. Dr. Sidney Camras, a Chicago physician, spent considerable time in studying the Museum's collection of the big-headed flies, Conopidae. Harry Nelson, of Herzl Junior College, Chicago, studied the beetle family Dryopidae and increased and improved the Museum's collection of this interesting group. In the Division of Lower Invertebrates the identification of the new material received during the year and the reclassification of the Webb Collection (purchased in 1943) produced various minor research papers by Dr. Fritz Haas, Curator. Miss Margaret G. Bradbury, Artist, by the preparation of scientific drawings to illustrate technical publications gave important aid to the research programs in several Divisions.

During the year there were expeditions in the field in Borneo, Colombia, Bermuda, and, at the end of the year, West Africa, together with field work by the staff in various parts of the United



The Division of Fishes is now housed in new quarters on the ground floor. Left: storage range, showing mezzanine and dumb-waiter. Right: library, with map case.

States. Philip Hershkovitz, Assistant Curator of Mammals, continued his mammalogical survey of Colombia, working mainly from a base established at Medellín. Though hampered by disturbed political conditions and by adverse weather, he accumulated more than one thousand specimens of mammals representing about ninety species. Late in the year headquarters were transferred to Bogotá.

The expedition to Borneo, conducted by Curator Davis, who was accompanied by Assistant Curator Inger, left the Museum in March and returned in October. Headquarters were established at Sandakan, British North Borneo, which gave direct access to extensive areas of tropical rain-forest. The primary aim of the expedition was to gather information on the habits, behavior, and general ecological relations of the vertebrate life of the rain-forest. Extensive notes, supplemented by motion pictures and still photographs, stomachs of specimens preserved for food analysis, and various anatomical preparations will form the basis for detailed studies in the Museum

laboratories. Records were made of rainfall, temperature, and humidity in the rain-forest; and the ecological structure of the forest in which the animals live and to which they are adapted was studied and recorded. A secondary aim of the expedition was to collect a representation of the fauna of Borneo to be used for comparison in studying the collections made by the Philippine Islands Zoological Expedition of 1946-47. The expedition to Borneo collected more than three hundred mammals, nearly five hundred birds, several hundred reptiles and amphibians, and several thousand fishes and invertebrates (including insects). On the way to and from North Borneo stops were made at Singapore, Kuching, Paris, and London to study material in museums and other institutions.

Taxidermist Leon L. Walters and Assistant Taxidermist Ronald J. Lambert made a field trip to the Gulf states for material for exhibits of turtles. Specimens of turtles, especially a fine living alligator snapper, accessory material and notes, and colored photographs of habitats were obtained. They worked especially at New Orleans and at Beachton, Georgia, where they enjoyed the generous hospitality of Herbert L. Stoddard, former member of the Museum staff.

Curator Pope collected salamanders and other amphibians and reptiles in Arkansas and Oklahoma for the Division of Reptiles. Chief Curator Schmidt consulted with herpetologists in Texas in April on the occasion of his lecture at Rockport and seized various occasions to collect amphibians and reptiles while he was in Germany. Assistant Curator Inger, aided by Miss Laura Brodie and by other staff members, continued the marking and observation of

The floor of the rain-forest in North Borneo teems with bloodthirsty land leeches. The slender leech is searching for a meal; the bloated one is filled with blood.



blue racers in the Indiana dunes area. For the Division of Lower Invertebrates Curator Haas, accompanied by Joseph B. Krstolich, Artist, again visited Bermuda to work from the Bermuda Biological Station for Research in the interests of the exhibition program. Curator Haas combined collecting and study of the fresh-water and brackish-water mollusks of the islands. It is essential to make such studies now because, since the marshes of Bermuda are being drained and converted into arable land, the whole animal community in question is likely to become extinct very soon. Noel Burlang, of Hamilton, Bermuda, who is well informed on the physical geography of the islands, gave effective aid in these studies.

Especial mention may be made of an activity that operates as an effective aid to research, exhibition, and public service. The file of animal photographs in the Department of Zoology, the reorganization of which has been continued by Miss Brodie, consists of approximately five thousand mounted photographs and reproductions housed in eight steel files and indexed so that any illustration can be located at a moment's notice. In addition there are twenty-five albums of photographs taken by various Museum expeditions (sixteen albums of animal photographs have not yet been transferred to the new system). In 1950 approximately seven hundred photographs and five hundred animal pictures clipped from magazines were mounted, including nearly two hundred new photographs that were added during the year. The file consists chiefly of animal portraits, but a special effort is being made to preserve photographs representing documentary records of animal behavior. The usefulness of the file is shown by the fact that it was consulted by more than one hundred persons during 1950.

Accessions—Zoology

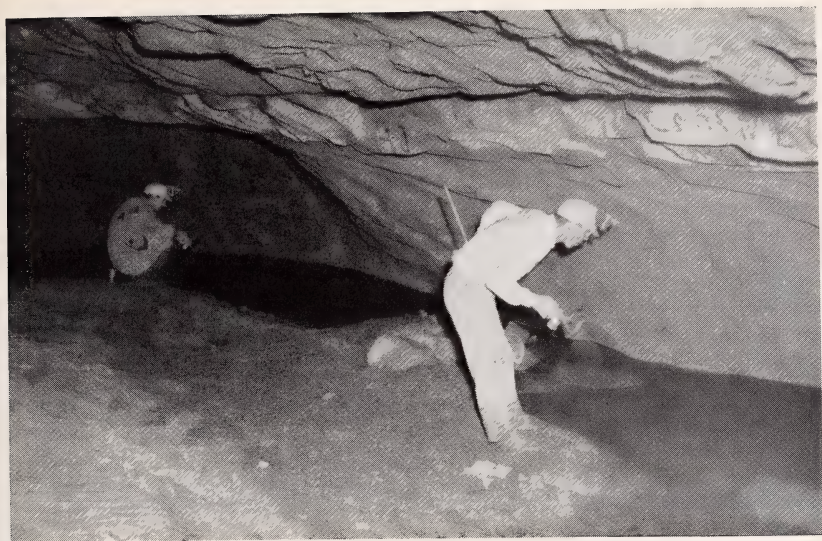
The major accession of specimens for the year was the acquisition by the will of the late Boardman Conover, Research Associate in the Division of Birds since 1924, of his entire collection of more than 18,000 game birds. Game birds are mainly of medium or large size and are correspondingly difficult to prepare in the field. For this reason the Conover Collection forms a complement of major importance to the Museum's research collections of birds. Other gifts of special importance are: 481 birds, 301 mammals (in addition to unaccessioned material), 56 amphibians, and 321 reptiles of Egypt and the Anglo-Egyptian Sudan from the Museum's Field Associate, Harry Hoogstraal; 39 birds and 26 mammals from the

Chicago Zoological Society; 1 bird and 14 mammals from the Lincoln Park Zoo; 257 birds from Dr. William C. Ohlendorf; 83 birds from Richard E. Tashian; a specimen of the rare Congo peacock from the New York Zoological Society; 132 specimens of bats of Kenya and Uganda from Walther Buchen; and 100 bats of Angola from the Companhia de Diamantes. Important gifts of amphibians and reptiles included 51 amphibians and 61 reptiles of Patagonia from Princeton University; 216 frogs of the Philippine Islands from Dr. William H. Stickel; 20 snakes from Dr. Eduardo Vaz, of the Instituto Butantan, Sao Paulo, Brazil; 142 salamanders of Arizona from Dr. Charles A. Reed; 211 amphibians of South Carolina from Miss Brodie and Miss Bradbury, of the staff; and 21 amphibians and 72 reptiles from Harvey M. Goldschmidt.

The principal gifts of fishes were 95 specimens of fishes of the family Clinidae, of which 55 are paratypes, from Dr. Clark Hubbs, and 92 specimens from the John G. Shedd Aquarium. Notable gifts of insects, in which mounted and determined material was especially important, further enriched the collections of insects. Field Associate Hoogstraal gave 6,802 specimens from various parts of the world, including nearly 5,000 mosquitoes from the United States, New Guinea, and the Philippines; Assistant Curator Dybas gave 3,456 specimens collected in the New World tropics and in the Pacific islands; Dr. C. Andresen Hubbard gave 206 specimens of 86 species of fleas, of which 20 are paratypes; and Major Robert Traub gave 69 fleas, including 40 types, from Mexico and Melanesia. Mollusk specimens continue to flow to the Division of Lower Invertebrates. The more notable gifts include 191 marine shells from Dr. Jeanne S. Schwengel, who has contributed systematically to the collection in former years; a collection of 217 Amazonian mollusks from Dr. Harald Sioli; and a collection of 550 lots of marine shells, mostly from the Pacific coast of the United States, from Mrs. Charlotte Doty, of Chicago.

Exhibits—Zoology

Exhibition programs for most Divisions in the Department of Zoology are now directed toward explanatory or illustrative cases intended to show what is interesting or remarkable or biologically important about the animal forms placed on exhibition in previous years. In the Division of Mammals the existing labels for exhibits were surveyed by Curator Sanborn and many were revised or corrected. The acquisition of a new-born hippopotamus early in the year



Loren P. Woods, Curator of Fishes, and Robert F. Inger, Assistant Curator, collect blind and white fishes, crustaceans, flatworms, insects, and spiders in Wild Cat Cave, Crawford County, Indiana. Photograph by George F. Jackson, of Evansville.

enabled Taxidermist Walters to make the necessary molds for the future preparation of a baby hippo. A special case at the end of the Hall of Whales (Hall N-1) presents salient facts about the anatomy of whales. A mounted skeleton of a porpoise shows the vestiges of the hind limbs, the transformation of the forelimbs into paddles, and the multiplication of teeth and their reduction to a uniform series. Models point out that the most essential characteristic of water-inhabiting animals is streamlining. The row of seven hairs on each side of the snout in a porpoise embryo marks it as a mammal (not a fish) quite as sharply as does the suckling of the young by the mother porpoise. Other models show how whales breathe and their division into two contrasting types, those that have teeth and feed on large prey and those with a baleen or whale-bone strainer by means of which they sieve relatively small animal food from the sea. Models and illustration, planned by Curator Davis, are by Artist Krstolich.

The systematic presentation of birds of the world in Boardman Conover Hall (Hall 21) is being supplemented by cases dealing with more general topics. A case with the heading "Young Birds: Their

Development" shows the precocial type of development of the bobwhite, in which the hatchling bird is able to follow its mother from the nest; the altricial type, in which the baby bird is hatched naked and helpless, illustrated by the English sparrow; and an intermediate type represented by the common tern. This case, begun before his resignation by Assistant Taxidermist Kenneth Woehleke, was completed by Assistant Taxidermist Carl W. Cotton with the aid of Leon R. Aboulafia, visiting fellow. The system for periodic poisoning of both exhibition and mammal and bird storage cases was reorganized during the year and placed under the direction of Curator Sanborn. Taxidermist Wonder gave assistance to the Division of Maintenance in this operation.

In the east part of Albert W. Harris Hall (Hall 18, Reptile and Amphibian Section) the models illustrating the salamanders, frogs, lizards, and snakes of the Chicago region were completely reinstalled in three cases that form an alcove. This alcove, long planned by Curator Pope, is especially designed for the use of school children and for groups under the guidance of the Raymond Foundation, but it meets also a broad popular interest. The models are supplemented by maps showing distribution of the species and by colored photographs of typical environments. The models are largely the work of Taxidermist Walters, aided by Assistant Taxidermist Lambert, and the reinstallation was also by them, with carefully designed labeling by means of pasted-on letters. The wall case showing enlarged models of tadpoles, prepared by Artist Krstolich, was reinstalled with the new style of labeling. Two other screens, "Where Snakes Live" and "Salamanders," were reinstalled.

The new wall case in the west part of Hall 18 (Insect Section) with the title "Some Mosquitoes Carry Malaria" is the first of a long-planned series to present topics from insect life that have broad popular and scientific interest. The life cycles of the malaria-causing organism *Plasmodium* and of the malaria-transmitting mosquito *Anopheles* are shown in enlarged models and diagrams. The eggs, larva, pupa, and adult of an *Anopheles* mosquito are the meticulous work in plastic of James B. Trott, former Artist-Preparator. They are supplemented by diagrammatic models of blood vessels and of the mosquito body to show the malaria cycle from man to mosquito to man. These insect models are among the most accurate and effective ever made. A painting showing a typical anopheles habitat and a map of the world distribution of malaria are the work of Miss Bradbury, Artist, who also took over the work of installation with pasted-on lettering of the labels.

LIBRARY OF THE MUSEUM

The ever-widening range of Chicago Natural History Museum's scientific endeavors in departmental and field research automatically expands the resources of the Museum Library. Needed tools for research are secured either by purchase, after careful analysis of ultimate requirement, or by exchange of publications with other scientific organizations. We are fortunate, also, in receiving as gifts many rare and valuable publications. This highly selective process is building the Library into one of the finest research centers in the world, not from the standpoint of size but as a storehouse of essential material concentrated in the fields of natural history.

Because serial publications (proceedings, memoirs, reports, journals, etc., of scientific societies and research organizations) contain data of first interest to scientists here, they continue to form the major part of the Library's holdings. Physical evidence of the growing importance of this material is the fact that the Library has found it necessary to add a fifth Kardex file to take care of recording additional incoming serials. Another indication of the emphasis placed on serial publications in research is the increase in interlibrary loan service, both borrowed and lent, the greater part of which is concerned with this type of material.

The Library's holdings were notably increased by the additional transfer on permanent loan from John Crerar Library of many volumes of two scientific journals, namely the *Wiener Entomologische Zeitung* and the *Deutsche Entomologische Zeitschrift*. The Museum takes this opportunity to express its profound appreciation of the outstanding co-operation and courtesy extended to it by John Crerar Library, not only in this transfer but in daily relations in exchanging reference aid. The foresight of the Crerar Library in placing this important material in a focal location has served the twofold purpose of making it easily accessible to the curatorial staff for taxonomic research as well as to scholars and students in general.

Substantial progress in recataloging the Library's collection according to the Library of Congress classification has been made to date, as the following figures indicate: total number of volumes classified (to the end of November, 1950)—23,457; total number of cards in new catalogue—44,761. The process of reclassification has presented the means of weeding out of the collection material not related to the concentrated interests of this Museum, material of ephemeral interest only, and unnecessary duplicates. Gradually all the material of no interest or value that had been added through



The cataloguing department of the Museum Library has been moved to new quarters.

the years as permanent acquisitions will be removed, thus freeing much-needed shelf space. At the same time, overcrowded departmental libraries are being relieved by the assimilation of material of more general nature in the general library.

Another important function of reclassification is that it permits the same judgment now used in selecting current acquisitions for binding to be applied to older materials. Evidence uncovered by reclassification, showing that much material of only temporary value to the Museum was bound in the past, serves to point up the need for constant care in bindery selection. As in all other libraries contributing to the listing of their holdings in the Union List of Serials, work on the revision of the new Supplement continues with the careful checking of the sections sent periodically by its publishers.

The overcrowded condition in one section of the Library partially occupied by book stacks (with its remaining area given over to the cataloguing department, the Kardex division, and operational space for preparation of all bindery material as well as for mechanical operations involved in labeling, marking, and minor repair jobs on books) was relieved by removal of the cataloguing department into an unoccupied area in the adjacent room that houses the new book

stacks. By shifting the tier of map cases closer to the stacks, this extremely necessary transfer provided the proper working accommodations for the cataloguers, the nature of their work requiring an atmosphere of quiet, free from constant interruption. The section vacated by the catalogue department is an ideal location for the newly installed shelf list. With the Kardex arranged directly opposite the shelf list, the checking of incoming serials is expedited through simultaneous consultation of both records. Another important feature is the proximity of the shelf list to both the reading and cataloguing rooms, thereby providing quick access to the information it contains.

The total number of accessions for the year, both books and serials, to the end of November, 1950, aggregated 2,149 items. The following books and serials have been selected from among the acquisitions because of their significance to research:

BOOKS

- Baerends, G. P., and J. M. Baerends-Van Roon, *An introduction to the study of the ethology of cichlid fishes* (1950)
- Baker, Frank Collins, *The molluscan family Planorbidae* (1945)
- Baldacci, Elio, *Die Systematik der Actinomyceten* (1947)
- Bernardi, A. C., *Monographie des genres Galatea et Fischeria* (1860)
- Bews, John William, *An introduction to the flora of Natal and Zululand* (1921)
- Bosworth, Thomas Owen, *Geology of the Tertiary and Quarternary periods in the northwest part of Peru* (1922)
- Bourguignat, Jules René, *Methodus conchyliologicus denominationis sine quo chaos* (1860)
- Brauer, August, ed., *Die Süßwasserfauna Deutschlands*, 19 pts. in 17 v. (1909-12)
- Brehm, Alfred Edmund, *Illustriertes Thierleben. Eine allgemeine Kunde des Thierreichs*, 6 v. (1864-69)
- Cazin, F. J., *Traité pratique et raisonné des plantes médicinales indigènes*, 2nd ed. (1858)
- Cobb, Arthur F., *Birds of the Falkland Islands* (1933)
- Connolly, Cornelius Joseph, *External morphology of the primate brain* (1950)
- Cooke, Theodore, *Flora of the Presidency of Bombay*, 2 v. (1901-8)
- De Beer, Gavin Rylands, *Development of the vertebrate skull* (1937)
- Deyl, M., *Study of the genus Sesleria* (1946)
- Ellenberger, Wilhelm, *An atlas of animal anatomy for artists* (1949)
- Etheridge, Robert, *Fossils of the British Islands stratigraphically and zoologically arranged*, v. 1. *Palaeozoic comprising the Cambrian, Silurian, Devonian, Carboniferous, and Permian species, with supplementary appendix brought down to the end of 1886* (1888)
- Fritsch, Anton, *Palaeozoische Arachniden* (1904)
- Furon, Raymond, *La paléogéographie, essai sur l'évolution des continents et des océans* (1941)
- Giebel, Christoph Gottfried Andreas, *Die Fische der Vorwelt, mit steter Berücksichtigung der lebenden Fische* (1848)
- Gould, Augustus Addison, *Otia conchologica: descriptions of shells and mollusks, from 1839 to 1862* (1862)

BOOKS (continued)

- Henrard, Jan Theodoor, *Monograph of the genus Digitaria* (1950)
- Hertwig, Richard, *Abstammungslehre; Systematik; Paläontologie; Biogeographie* (1914)
- Herzfeld, Ernst Emil, *Archaeologische Mitteilungen aus Iran*, v. 1-10 (1929-39)
- Hultén, Eric, *Atlas över växternas utbredning i Norden; fanerogamer och ormbunksväxter* (1950)
- International Commission for the Scientific Exploration of the Mediterranean Sea, *Faune et flore de la Méditerranée*, 2 v. (1928-34)
- , *Rapports et procès-verbaux des réunions*, 7 v. (1926-38)
- Kuroda, Nagamichi, *Birds of the island of Java*, 2 v. (1933-36)
- Lindley, John, *The fossil flora of Great Britain; or, figures and descriptions of the vegetable remains found in a fossil state in this country*, 3 v. (1831-37)
- Loudon, John Claudius, *Arboretum et fruticetum Britannicum; or, the trees and shrubs of Britain, native and foreign . . . 2nd ed.*, 8 v. (1844)
- Lowe, Edward Joseph, *A natural history of new and rare ferns* (1862)
- Malbrant, René, *Faune de l'Equateur Africain Français*, tome 1. *Oiseaux* (*Encyclopédie biologique*, tome 35) (1949)
- Oppenheimer, Hans C., *Neuere Daten zur Genetik der Pflanze* (1932)
- Seguy, Eugéné, *Le Microscope, emploi et applications*, 2 v. (1942, 1949)
- Shuttleworth, R., *Notitiae malacologicae, oder Beiträge zur Näheren Kenntniss der Mollusken*, Heft 2: I. *Monographische Versuche . . .* (1877)
- Silveus, William Arents, *Texas grasses; classification and description of grasses* (1933)
- Sprengel, Kurt P. J., *Kurt Sprengel's Anleitung zur Kenntniss der Gewaeckse*, 2nd ed. rev., 3 v. (1817-18)
- Tierreich, Das, *Dr. H. G. Bronn's Klassen und Ordnungen des Thier-reichs wissenschaftlich dargestellt in Wort und Bild*. Bd. 3, Abt. 2, *Mollusca*, Buch 2, Lief. 136-151 (1912-27); Bd. 6, Abt. 1: *Pisces*, Buch 1 (1924)
- Wehmer, Carl, *Die Pflanzenstoffe botanischsystematisch bearbeitet. Phanerogam*, 2 v. (1929-31)
- Westerlund, Carl Agardh, *Fauna der in der paläarktischen region (Europa, Kaukasien . . .) lebenden Binnenconchylien*, 7 pts. (1886-90)
- Winckler, E., *Geschichte der Botanik* (1854)

SERIALS

- Acta Zoologica*, v. 1-7 (1920-36)
- African affairs, journal of the Royal African Society*, v. 1-6 (1901-7), v. 39— (1940—)
- Anatomischer Anzeiger; Centralblatt für die gesamte wissenschaftliche anatomie*, Bd. 89, Hft. 19/21, 23/24 (1940), Bd. 90-95 (1940-48), Bd. 96, 97, Hft. 1/9 (1949)
- Arbeiten über physiologische und angewandte Entomologie aus Berlin-Dahlem*, v. 1-11 (1934-44)
- Archaeology; a magazine dealing with the antiquity of the world*, v. 1— (1948—)
- Australasian herbarium news*, no. 1— (1947—)
- Berlin. Deutsches Entomologisches Museum. *Supplementa entomologica*. Herausgegeben und redigiert von Walther Horn, no. 1-17 (1912-29)
- Cuadernos Americanos*, v. 1— (1942—)
- Entomological Society of British Columbia. *Proceedings*, no. 2, 1901—; no. 6, 1915; no. 8, 1916—; v. 46, 1950
- . *Quarterly Bulletin*, nos. 1-10 (1906-8)
- Entomological Society of Southern Africa. *Journal*, v. 1-10 (1939-48)
- Entomologische Beihefte aus Berlin-Dahlen*, nos. 1-10 (1934-43)

SERIALS (continued)

- Gegenbaurs morphologisches Jahrbuch, eine Zeitschrift für Anatomie und Entwicklungsgeschichte*, v. 27-32, 39-52, 55, 59, 67-69, 73-75, 81, 83 (1899-1923, 1926, 1928, 1931-32, 1933-35, 1938, 1939)
- Geologists' Association, London. *Proceedings*, v. 13-32 (1895-1921)
- Insecta; revue illustrée d'entomologie*, v. 1-13 (1911-24)
- Linnean Society of London. *Transactions*, v. 20, pts. 2-3 (1847, 1851); v. 21; v. 23-24; v. 26, pts. 1-3 (1869)
- Madrid. Instituto Español de Entomologia. *Eos*, v. 1— (1925—)
- Münchener Entomologischer Verein. *Mitteilungen*, v. 1-5 (1877-81)
- Palaeontographica*, Abt. A: *Paläozoologie-Stratigraphie*, v. 81-99 (1934-50) and continuation
- , Abt. B: *Paläophytologie*, v. 79-88 (1934-48) and continuation
- , supplement (1934-41) and continuation
- Palaeontologia Polonica*, tome 1, 2 (1929-32), tome 3 (1948)
- Paleontologische Zeitschrift*, v. 1-21 (1914-39)
- Royal Dublin Society. *The scientific transactions of the Royal Dublin Society*, ser. II, v. 1-9 (1877-1909)
- Société Zoologique de France. *Mémoires de la Société Zoologique de France*, v. 1-16 (1888-1903)

ON PERMANENT LOAN FROM JOHN CRERAR LIBRARY

- Deutsche Entomologische Zeitschrift*, v. 3-24 (1859-80), v. 26-30 (1882-86), v. 31-75 (1887-1933)
- Wiener Entomologische Zeitung*, v. 1-50 (1882-1933)

PUBLIC RELATIONS

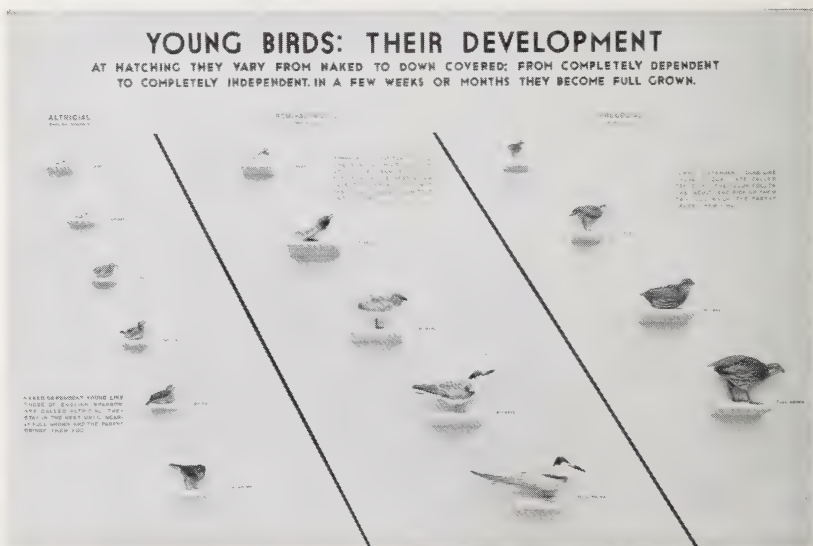
The Museum again acknowledges its debt to the newspapers of Chicago and to the national press, press wire-services, and periodical publications for splendid co-operation in giving generous space to news of its activities. Several times a week, both locally and over the country, reminders were printed that kept the public aware of the existence of the Museum, the scope of its exhibits and research, and the current events on its expeditions, in its laboratories, and in its lectures and other educational programs.

During the year the Public Relations Counsel released 254 news stories directly to the press. This publicity was augmented in various ways: by issuing advance proofs of principal stories to be published in the Museum *Bulletin*, by follow-up assignments made to reporters and photographers by newspaper editors upon receipt of Museum releases, and by co-operation of the Museum and the publicity divisions of other organizations in enterprises that would bring mutually valuable notice in the press. The large metropolitan dailies were not the only targets of Museum publicity. Additional notice was received through releases to a special list of several

hundred community and foreign-language newspapers of various neighborhoods within Chicago as well as to the dailies and weeklies of the suburbs and the regional area. Wire and mail national news agencies expanded this coverage to a coast-to-coast basis, and releases of unusual importance and interest often received international circulation. Special acknowledgment is made to the publishers, executives, and editorial staffs of the following: *Chicago Daily Tribune*, *Chicago Sun-Times*, *Chicago Daily News*, *Chicago Herald-American*, City News Bureau of Chicago, Associated Press, International News Service, United Press Association, Acme News Pictures, International News Photos, and Science Service. In several instances the daily newspapers of Chicago and of other cities, notably St. Louis, have given Museum pictures and stories full-page spreads in Sunday features.

Radio and television continued to be sources of additional publicity. Through them the Museum was represented in news broadcasts and in feature programs and educational forums. Local stations contributing time to the Museum were WMAQ, WGN, WGN-TV, WMBI, WIND, WBBM, WENR, WLS, and WJJD. Network programs on which the Museum was represented included

A new exhibit in Boardman Conover Hall (Hall 21) sets forth contrasts in types of development among birds, illustrated by the bobwhite, English sparrow, and tern.



both radio and television by the Columbia Broadcasting System, the National Broadcasting Company, and the Mutual Broadcasting System, and radio via American Broadcasting Company.

Publicity contacts were maintained between the Museum and its own Members through the news, features, and picture-coverage of the institution's monthly *Bulletin*. The *Bulletin* serves also as an exchange medium in the Museum's relations with other scientific and civic institutions and as an additional source of material for the newspapers. Other publicity routines were continued. Thousands of folders, as usual, were distributed through co-operating agencies such as hotels, travel bureaus, department stores, civic bureaus, and libraries, and through seven Chicago museums in other fields of science and art. Through the co-operation of the Illinois Central System, Chicago and North Western Railway, the Chicago, Aurora and Elgin Railroad, and the Chicago Transit Authority, posters were displayed in railway stations and on suburban trains to advertise the Museum's lecture courses for adults and the Raymond Foundation programs for children.

PHOTOGRAPHY AND ILLUSTRATION

The Division of Photography made during the year a total of 16,100 negatives, prints, enlargements, lantern slides, and transparencies for the Museum, other institutions, the press, and general sales. More than 107,000 negatives are now in the files.

Douglas E. Tibbitts, Staff Illustrator, prepared for the departments and divisions of the Museum drawings, lettering, and other art work that amounted to a total of approximately 165 separate pieces of finished work by the end of the year. Silk-screen printing apparatus was added to the equipment of his office for rapid duplication of designs in color, thereby increasing the scope of his work.

MOTION PICTURES

After being in production for nearly two years the Museum's motion-picture film "Through These Doors" (changed from the temporary title "Treasure House") was completed and plans were worked out for its distribution. The first showing of this film was before the annual conference of the Museums Association (Great Britain) in Aberdeen, Scotland. The following week it was shown to the scientific staff of the British Museum (Natural History) and at a later date to the members of the Natural History Section of the

International Council of Museums, whose biennial conference was held in London. Complimentary reports were received from the three showings. The subject matter, especially the techniques illustrated, proved of great interest to these audiences. During the coming year it is anticipated that many organizations will avail themselves of the opportunity to see this film for a better understanding of the Museum's work in scientific, educational, and public services. In addition, one motion-picture was produced from material in the Museum's film library. Such films are used in the schools and by other interested organizations.

At the request of the Department of Anthropology the Division of Motion Pictures participated in the Museum's archaeological expedition to the Southwest. A total of 2,200 feet of color film was exposed during a period of five weeks in the field, and this material is now being edited into a new film that will tell the story of the Museum's work in that area over a period of years. The new film will replace one made three years ago, although some scenes from the old film will be incorporated into the new one. Color transparencies and motion-picture records of various natural-history subjects were made for the scientific departments of the Museum to use both in research problems and as visual aids. This work has become an important function of the Division of Motion Pictures.

PUBLICATIONS AND PRINTING

The publications of the Museum were generously distributed during 1950 to institutions and scientists. Ninety-five new names were added to the mailing lists, and a total of 17,704 copies of publications was distributed to domestic and foreign exchanges. Sales totaled 3,909 copies in the Scientific Series, 10,266 in the Popular Series, and 26,827 copies of miscellaneous publications, such as guides, handbooks, memoirs, and technique papers (see page 90). For future sales and other distribution an additional 11,196 copies of publications were wrapped, labeled, and stored.

The Museum Press issued during the year fifteen titles in the Scientific Series of publications, one in the Popular Series, two in the Memoirs Series, one Annual Report, and one reprint. The total number of copies printed was 32,569, of which 31,669 copies were printed by letterpress, with a total of 1,748 pages of type composition, and 900 copies were printed by the Vari-type-offset process, with a total of 113 pages by Vari-type composition. Twelve numbers of Chicago Natural History Museum *Bulletin* were printed, averaging

6,000 copies an issue. Other work by letterpress included posters, price lists, lecture schedules, Museum labels, post cards, Museum stationery, and specimen tags, totaling 1,012,540 impressions. Two series of Museum Stories for Children (Raymond Foundation) and miscellaneous work were printed by the Vari-type-offset process, with a total of 197,802 impressions.

A list of titles in the publications series issued in 1950 by Chicago Natural History Museum Press follows:

DEPARTMENT OF ANTHROPOLOGY

BRAIDWOOD, ROBERT J.

Prehistoric Men, Popular Series, Anthropology, no. 37, 117 pages, 37 text figures (reprint)

MARTIN, PAUL S., AND JOHN B. RINALDO

Turkey Foot Ridge, A Mogollon Village, Pine Lawn Valley, Western New Mexico, Fieldiana: Anthropology, vol. 38, no. 2, 164 pages, 65 text figures
Sites of the Reserve Phase, Pine Lawn Valley, Western New Mexico, Fieldiana: Anthropology, vol. 38, no. 3, 178 pages, 78 text figures

RINALDO, JOHN B.

An Analysis of Culture Change in the Ackmen-Lowry Area, Fieldiana: Anthropology, vol. 36, no. 5, 14 pages, 2 text figures

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

Contributions to the Flora of South America: Studies on Andean Compositae—I, Studies in South American Plants—II, Fieldiana: Botany, vol. 27, no. 1, 113 pages, 12 text figures

MACBRIDE, J. FRANCIS

Natural Landscapes of the United States, Popular Series, Botany, no. 27, 47 pages, 31 text figures, 6 maps

Flora of Peru, Botanical Series, vol. 12, part 3, no. 3, 221 pages

DEPARTMENT OF GEOLOGY

OLSON, EVERETT CLAIRE

The Temporal Region of the Permian Reptile Diadectes, Fieldiana: Geology, vol. 10, no. 9, 15 pages, 6 text figures

RICHARDSON, EUGENE S., JR.

A Middle Devonian Octactinellid Sponge from New York, Fieldiana: Geology, vol. 10, no. 10, 10 pages, 5 text figures

ROY, SHARAT KUMAR, AND ROBERT KRISS WYANT

The Smithonia Meteorite, Fieldiana: Geology, vol. 7, no. 9, 6 pages, 4 text figures

The La Porte Meteorite, Fieldiana: Geology, vol. 7, no. 10, 10 pages, 9 text figures

DEPARTMENT OF ZOOLOGY

BLAKE, EMMET R.

Report on a Collection of Birds from Guerrero, Mexico, Fieldiana: Zoology, vol. 31, no. 39, 19 pages

Report on a Collection of Birds from Oaxaca, Mexico, Fieldiana: Zoology, vol. 31, no. 40, 25 pages

Birds of the Acary Mountains, Southern British Guiana, Fieldiana: Zoology, vol. 32, no. 7, 59 pages

CONOVER, BOARDMAN

A Study of the Spotted Tinamous, Fieldiana: Zoology, vol. 31, no. 37, 24 pages

A Study of the Elegant Tinamous, Fieldiana: Zoology, vol. 31, no. 38, 12 pages

LIU, CH'ENG-CHAO

Amphibians of Western China, Fieldiana: Zoology Memoirs, vol. 2, 423 pages, 11 plates, 100 text figures

TRAUB, ROBERT

Siphonaptera, from Central America and Mexico, Fieldiana: Zoology Memoirs, vol. 1, 238 pages, 54 text figures

SANBORN, COLIN CAMPBELL, AND A. J. NICHOLSON

Bats from New Caledonia, the Solomon Islands, and New Hebrides, Fieldiana: Zoology, vol. 31, no. 36, 26 pages, 4 text figures, 1 map

ADMINISTRATIVE PUBLICATIONS

Report of the Director to the Board of Trustees for the Year 1949, 140 pages, 26 illustrations

CO-OPERATION WITH OTHER INSTITUTIONS

Through interlibrary loans the resources of the Library of the Museum were available to other institutions and, as in past years, the laboratories and research collections of the Museum were open to visiting scientists. The Museum continued its co-operative educational plans with the University of Chicago, Northwestern University, Antioch College, and the Art Institute of Chicago.

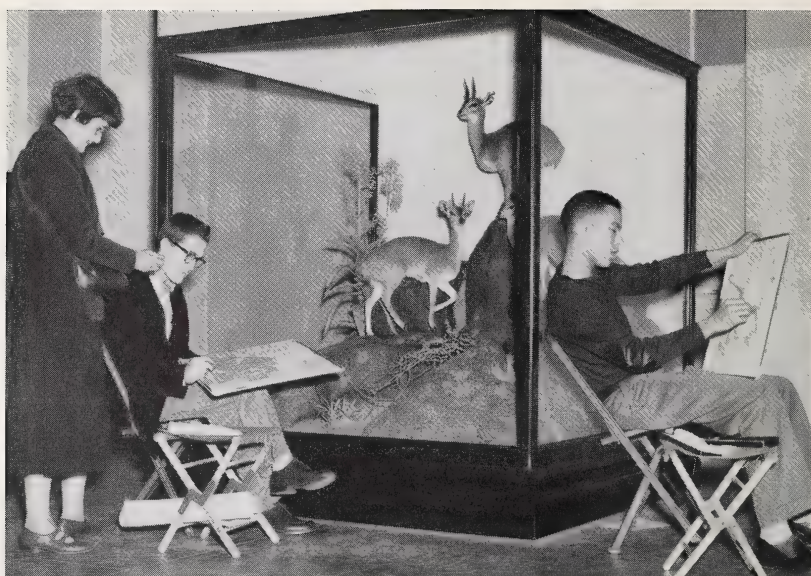
Art students constantly use the Museum exhibits as source materials for sketching, modeling, and design. These students, who come in supervised classes from the various art schools in Chicago, range in age from children of six years to adults. Their quiet earnestness as they work in the Museum halls attracts the attention of many visitors. Represented are the Art Institute of Chicago, Chicago Academy of Fine Arts, Academy of Applied Art, and the Institute of Design. Greatest in number are the students from the School of the Art Institute of Chicago. Many of these classes come regularly, and their interpretations of the natural history of the

world are unique and interesting. Selected examples of their work form a special exhibit in Stanley Field Hall of the Museum for one month each summer.

Another type of adult student who comes to the Museum in supervised classes is the teacher-in-training. As future teachers these students, in education classes from several universities and colleges in the Chicago area (Roosevelt College, Pestalozzi-Froebel Teachers College, National College of Education, and De Paul University), are interested in learning how to use the resources of a museum. This instruction for teachers is one of the most hopeful signs of better educational use by the schools of Museum exhibits. Frequent use of Museum exhibits is made by individual students from Roosevelt College, for whom the Museum certifies attendance at the Museum. Unusual student-visitors in the Museum are officers from the Quartermasters Corps of the United States Army, who, although they come especially to see and study spices and food plants, usually become interested in the entire Museum. The co-operative educational plan adopted in 1946 by this Museum and Antioch College, Yellow Springs, Ohio, provides for the temporary employment by the Museum of successive groups of undergraduate students who alternate periods of study on the college campus with periods of work with pay. Under this plan fourteen young men and women were employed in 1950 by the Museum in its scientific departments and administrative offices.

A five-year contract for scientific co-operation between the Universidad Autonoma de El Salvador and Chicago Natural History Museum was signed on January 26, 1950. Under the agreement the Museum will send each year to the Instituto Tropical de Investigaciones Cientificas of the Universidad Autonoma a botanist, a geologist, and a zoologist for scientific research and exploration. All collections resulting from the contract are available to the Museum, which will, in turn, build representative collections for retention by the Tropical Institute. The results of these studies will be published by the Museum, by the Tropical Institute, or by both. The plan was inaugurated in September with the departure for El Salvador of Dr. Norman C. Fassett, professor of botany on leave from the University of Wisconsin, who will collect and study aquatic plants.

The Museum continued to co-operate with Dr. Willard F. Libby, of the Institute for Nuclear Studies, University of Chicago, in his research on carbon-14 dating (see pages 35 and 38). In return for assistance by the Navy Department to the 1949-50 anthropological expedition to Micronesia, Dr. Alexander Spoehr, Curator of



Supervised classes from the art schools of Chicago sketch in the Museum's halls.

Oceanic Ethnology, devoted a share of his time in the field as anthropological consultant on administrative problems to the local Navy Civil Administration Unit in the northern Marianas district. He was concerned mainly with land use, ownership, inheritance, and the establishment of a more effective machinery of local self-government among the Chamorros, and recommendations were made for the preservation and care of archaeological sites on Saipan, Tinian, and Rota in connection with the conservation program of the Trust Territory. A research program of studies on the distribution of the mammals of Arkansas involving co-operation with the Department of Zoology of the University of Arkansas has been developed by Colin C. Sanborn, Curator of Mammals, during repeated visits to the state of Arkansas. In the fall of 1950 he spent three weeks in the central and southern parts of the state in the interests of this program.

Members of the staff continued to lecture before classes and seminars at various universities and to conduct classes at the Museum. Dr. Paul S. Martin, Chief Curator of Anthropology, Donald Collier, Curator of South American Ethnology and Archaeology, and George I. Quimby, Curator of Exhibits, gave a course at the Museum

in New World archaeology for the University of Chicago. During the spring quarter Chief Curator Martin, aided by Dr. John B. Rinaldo, Assistant Curator of Archaeology, held a seminar in South-western archaeology for University of Chicago students. Curator Collier supervised a research course at the Museum on Andean archaeology for graduate students and, with Curator Quimby, gave a course in world ethnology at the University of Chicago. Curator Quimby gave a course in ethnology of North and South America at Northwestern University.

Classes in botany from the University of Chicago, Northwestern University, the State University of Iowa, and Valparaiso University visited the Department of Botany at various times during the year and were conducted through the laboratories and herbaria. Dr. Theodore Just, Chief Curator of Botany, held a seminar at Northwestern University in March on divergent mutation and at the University of Illinois in December on fossil cycads and on fossil floras of the southern hemisphere. He conducted a class in paleobotany at Northwestern University in the summer session. Dr. Hugh C. Cutler, Curator of Economic Botany, lectured at the University of Illinois on culture and foods of the Andes and held a seminar on the history of corn and, during the fall, conducted a graduate class in ethnobotany for the University of Chicago.

The advanced course in vertebrate paleontology offered by the University of Chicago was, as in former years, held at the Museum. During the course Dr. Rainer Zangerl, Curator of Fossil Reptiles, lectured on protorosaurians, nothosaurs, and turtles, and Dr. Robert H. Denison, Curator of Fossil Fishes, on primitive fishes. Curator Zangerl discussed the function of comparative anatomy in evaluation of structural characters at a symposium in physical anthropology at the University of Chicago, and Curator Denison gave two lectures on the origin and early history of the chordates before a class in biological sciences. Bryan Patterson, Curator of Fossil Mammals, spoke before the graduate class in physical anthropology at the University of Chicago on variation in animals and the principles of taxonomy. By invitation he visited the University of California, Berkeley, in October to hold seminars and to participate in a symposium on continental drift.

Karl P. Schmidt, Chief Curator of Zoology, as Lecturer in the Department of Zoology at the University of Chicago, took part in the exchange of faculty between the University of Chicago and the University of Frankfurt, Frankfurt-on-Main, Germany, where he was in residence from late April to the last day of July. In addition

to a seminar for advanced students in zoology, using as textbook the *Principles of Animal Ecology* (Allee, Schmidt, and others), he held conferences with students and staff at Senckenberg Museum, which has relations with the University of Frankfurt essentially parallel to those between Chicago Natural History Museum and the University of Chicago. He was received with great cordiality at the museum by Director Robert Mertens, who had been guest of this Museum on a similar faculty exchange. After his return from Germany Chief Curator Schmidt lectured informally on various occasions to classes and other groups at the University of Wisconsin and the University of Chicago. In December he served as consultant on museum problems at the University of Florida, lectured to the Society of Sigma Xi, and took part in a conference on the Caribbean at mid-century. D. Dwight Davis, Curator of Vertebrate Anatomy, was appointed Lecturer in Zoology at the University of Chicago, and in March delivered a lecture at a symposium on the evaluation of characters in classification and evolution.

Scientists from other institutions continued to make use of the study collections in the scientific departments of the Museum. Georges Henri Rivi re, Associate General Director of the International Council of Museums, visited the Museum in January and conferred with the Director, Chief Curator Martin, and Dr. Sharat K. Roy, Chief Curator of Geology. Dr. Guy Stresser-Pean, of Paris, spent two days looking over the Mexican collections in the Department of Anthropology in preparation for a year's ethnological work among the Huastec Indians. He also consulted with the Department of Botany concerning food plants of the Huastec. Mrs. Kamer Aga-Oglu, of the Museum of Anthropology of the University of Michigan, spent six weeks in the Museum examining the Hester Collection of Chinese ceramics from the Philippines. She made important additions to the catalogue of this collection and selected type specimens for photographing. Dr. Sigurd Erixon, of the Institute of Folk Life Investigation, Nordic Museum, Stockholm, and Dr. Ake Campbell, of the Folk Culture Archive, University Library, University of Uppsala, studied exhibits, consulted with Curators Collier and Quimby on the nature of anthropological studies in the United States, and received assistance in assembling data on American Indian houses, wooden utensils, and foods.

Many visiting botanists used the Museum's botanical collections and laboratories. Dr. Edgar Anderson, of Missouri Botanical Garden, studied in the herbaria; Dr. S. A. Cain, of Cranbrook Institute, studied ferns of Michigan; Hugh Iltis, of Missouri Botanical



The Raymond Foundation held a one-day course on natural history of the Chicago region for forty-three supervisors and instructors of the Chicago Park District.

Garden, identified his palm collection from Central America; Dr. Duane Isely, of Iowa State College, studied legumes; Professor Dwight M. Moore, University of Arkansas, ferns of Arkansas; Dr. Robert W. Schery, Missouri Botanical Garden, legumes; and Dr. Eula Whitehouse, Southern Methodist University, cryptogams.

The collections and facilities of the laboratories in vertebrate paleontology were used by several investigators, among whom were Professor Claude W. Hibbard and John Dorr, Jr., of the University of Michigan; Dr. Charles A. Reed, of the University of Illinois; Dr. Walter Segall, of Northwestern University; and Walter Wheeler, of Yale University. Miss Suzanne Leclerque, professor of paleontology at the University of Liège in Belgium, came to the Museum in the spring to examine the study collection of fossil plants. Dr. Roland Brown, paleobotanist at the United States Geological Survey, visited the Museum in the fall to study the collection of *Paleoxyris* from the Pennsylvanian deposits near Wilmington, Illinois, and the fossil plants collected in the Gulf regions.

Many scientists from other institutions used the laboratories of the Department of Zoology and studied its collections. Javier Ortiz de la Puente, of the Museo de Historia Natural "Javier Prado" in Lima, Peru, worked from March to September on the Peruvian collections of mammals and birds. Frank Porter, engineer of Cook Research Laboratories, studied sea lampreys and discussed the problems presented by their invasion of the Great Lakes with Loren P. Woods, Curator of Fishes. Brief visits for study were made by Dr. Alexander Wetmore, secretary of the Smithsonian Institution; William H. Phelps, of Caracas, Venezuela; Dr. James P. Chapin and Dr. G. H. H. Tate, of the American Museum of Natural History; Reverend A. I. Good, of Wooster, Ohio; Dr. Robert Storer, of the University of Michigan; Harold Hanson, of the Illinois Natural History Survey; Dr. Arthur C. Twomey, of the Carnegie Museum; Dr. P. E. Vanzolini, of Sao Paulo, Brazil; Dr. L. M. Klauber, of San Diego, California; and Richard Spieler, of Rochester, New York. Among those using the laboratory and collections of the Division of Anatomy were Dr. E. L. Du Brul, of the College of Dentistry, University of Illinois, Dr. Waldemar Meister, of the Chicago College of Osteopathy, and Dr. Robert L. Miller, of the University of Chicago.

Leon R. Aboulafia, who holds a fellowship from the Biological Institute of the Teachers Seminary at Tel Aviv, Israel, arrived at the Museum in June to study the techniques of museum exhibition and organization, with this Museum as his principal host. At the end of the year D. S. Rabor, of Silliman University, Dumaguete, Negros Island, John Simon Guggenheim Memorial Foundation Fellow from the Philippine Islands, came to the Museum. He had been contributing collections of vertebrates from Negros and other islands of the Philippines since his participation in the Museum's expedition to the Philippines in 1946-47 under Harry Hoogstraal, Field Associate. It is hoped that he may be able to prepare handbooks for use in the Philippines, especially in university classes, by working with the Museum staff and by reviewing the Philippines material in the Museum's collections.

Students working independently or under the direction of a university or college have made good use of the exhibits and study collections in African ethnology and physical anthropology. Several students specializing in studies of Angola (Portuguese West Africa) have found the Museum exhibits particularly helpful. Assistant Curator Rinaldo supervised graduate students from the University of Chicago who were making a study of wood and fiber artifacts

of the Mogollon culture. Graduate students in zoology of the University of Chicago who are engaged in studies at the Museum are Robert F. Inger (of the staff), under the direction of Chief Curator Schmidt; Robert Sokol and Ronald Ward, under the direction of Alfred E. Emerson, Research Associate in Insects; and William J. Beecher and Robert Smolker, under the direction of Curator Davis.

Other special activities of staff members included lectures before general groups and radio talks. Assistant Curator Rinaldo gave a movie-lecture on Southwestern archaeology before the Earth Science Club of northern Illinois; Dr. Julian A. Steyermark, Associate Curator of the Herbarium, talked before the Barrington Women's Club, Chicago Aquarium Society, Conservation Council, and Men's Garden Club of Mundelein and Libertyville; Harry E. Changnon, Curator of Exhibits in Geology, addressed the Chicago Lapidary Club; Chief Curator Schmidt lectured before the spring seminar of the Texas Game, Fish, and Oyster Commission in Rockport; Curator Davis talked on his recent expedition to Borneo at the annual dinner of the employees of the Chicago Zoological Society; and Dr. Austin L. Rand, Curator of Birds, discussed the Museum's exhibit of bird eggs and nests over radio station WJJD (Chicago). Curator Rand was invited to accompany a group from the Armour Livestock Bureau on an air-tour of the northwestern states to study urgent conservation problems. Rupert L. Wenzel, Assistant Curator of Insects, and Curator Sanborn attended the Fifth Army Insect and Rodent Control Conference at Fort Sheridan, Illinois, and Assistant Curator Wenzel addressed the conference on insect control. Dr. R. M. Strong, Research Associate in Anatomy, president of the Illinois Audubon Society, was appointed by Governor Adlai E. Stevenson to the chairmanship of a committee for consultation on problems relating to the Illinois Beach State Park near Waukegan. Associate Curator Steyermark was named a member of the committee.

ACTIVITIES OF STAFF MEMBERS IN SCIENTIFIC SOCIETIES

Dr. Paul S. Martin, Chief Curator of Anthropology, attended the annual meetings of the American Anthropological Association held in December in Berkeley, California, to commemorate the fiftieth anniversary of the founding of the Department of Anthropology at the University of California and presented a paper on "The Southwestern Co-Tradition." With Dr. John B. Rinaldo, Assistant

Curator of Archaeology, and Miss Elaine Bluhm, Assistant in Archaeology, he attended the Pecos Conference on Southwestern archaeology at the Museum of Northern Arizona in Flagstaff in August. Donald Collier, Curator of South American Ethnology and Archaeology, attended the annual meeting of the Division of Anthropology and Psychology of the National Research Council. He presented papers at the symposium on techniques in archaeology and the seminar on physical anthropology held by the Viking Fund, Inc., in New York in March and June, respectively. He continued to serve as a member of the Committee on Carbon-14 Dating of the American Anthropological Association and the Geological Society of America and as a representative of the American Anthropological Association to the Division of Anthropology and Psychology of the National Research Council. He is a member of the executive committee of the National Research Council and second vice-president of the Society for American Archaeology. George I. Quimby, Curator of Exhibits, attended in May the joint annual meetings of the Society for American Archaeology, of which he is secretary, and the Central States Branch of the American Anthropological Association at the University of Oklahoma, Norman.

Dr. Theodore Just, Chief Curator of Botany, attended the meeting of the Society of Economic Paleontologists and Mineralogists in Chicago in April and read a paper before the symposium on applied paleobotany. Dr. Julian A. Steyermark, Associate Curator of the Herbarium, Dr. Earl E. Sherff, Research Associate in Systematic Botany, and Chief Curator Just attended the annual meetings of the American Institute of Biological Sciences in Columbus, Ohio, in September. Chief Curator Just presented papers before the Society for the Study of Evolution, of which he is secretary, and the Systematic Section of the Botanical Society of America. During the year he was appointed chairman of the Committee on Paleobotany, Division of Geology and Geography, of the National Research Council. Associate Curator Steyermark is secretary of the Systematic Section of the Botanical Society of America and secretary of the Systematic Section of the Society of Plant Taxonomists. Dr. Francis Drouet, Curator of Cryptogamic Botany, represented the Museum at the Seventh International Botanical Congress held in Stockholm, Sweden, in July and presented a paper. Dr. José Cuatrecasas, Curator of Colombian Botany, was appointed corresponding member of the Ecuadorian Institute of Natural Sciences. Dr. Hanford Tiffany, Research Associate in Cryptogamic Botany, is president of the Phycological Society of America.



A reproduction of a ginger lily has been added to the plant exhibits in Hall 29.

Dr. Sharat K. Roy, Chief Curator of Geology, Robert K. Wyant, Curator of Economic Geology, Bryan Patterson, Curator of Fossil Mammals, Dr. Rainer Zangerl, Curator of Fossil Reptiles, and Dr. Robert H. Denison, Curator of Fossil Fishes, attended the meetings of the Geological Society of America in Washington, D.C., in November. Curators Patterson, Zangerl, and Denison also attended the meetings of the Society of Vertebrate Paleontology held concurrently, where Curator Patterson discussed the Early Cretaceous mammals found in northern Texas. Eugene S. Richardson, Jr., Curator of Fossil Invertebrates, and Curator Wyant attended the meetings of the American Association of Petroleum Geologists in Chicago in April. In September Curator Wyant attended the meetings of the National Chemical Exposition held also in Chicago.

Dr. Fritz Haas, Curator of Lower Invertebrates, presided as president at the annual meeting of the American Malacological Union, which was held in the Museum in June. Colin C. Sanborn,

Curator of Mammals, attended the meetings of the American Society of Mammalogists in Yellowstone National Park in June and was elected to the society's board of directors. During the year he was elected a member of the Washington Academy of Sciences, Washington, D.C., with the citation, "In recognition of his contributions to systematic zoology, particularly in the classification of the Chiroptera, and faunal studies in South America." Dr. Austin L. Rand, Curator of Birds, attended the meetings of the American Ornithologists' Union in St. Paul and was elected a member of the International Committee, the governing and operating board for the International Ornithological Congresses. Clifford H. Pope, Curator of Amphibians and Reptiles, was elected president of the Kennicott Club of Chicago, an organization that includes most of the active workers in the museum fields of zoology and botany in the Chicago region. D. Dwight Davis, Curator of Vertebrate Anatomy, was elected vice-president of the Society for the Study of Evolution, and Chief Curator Schmidt continued as treasurer.

The Director of the Museum attended the annual meeting of the American Association of Museums held in Colorado Springs, Colorado, in May. He also attended the meeting of the Council of that organization and visited the Denver Museum of Natural History with that body. At other times during the year he visited the Los Angeles County (California) Museum, Arizona State Museum at Tucson, and the university museums at Stanford University, California, and at Michigan State College. Mrs. Meta P. Howell, Librarian of the Museum, and Mrs. Eunice M. Gemmill, Associate Librarian, attended the midwinter conference of the American Library Association in Chicago in January. They also attended during the year sessions of various professional organizations such as the Special Libraries Association, the Illinois Regional Group of Cataloguers, and the Chicago Library Club.

A number of staff members serve in editorial capacities on scientific journals. Dr. Alexander Spoehr, Curator of Oceanic Ethnology, resumed the review editorship of the *American Anthropologist* in December upon his return from his expedition to Micronesia, Curator Collier having served as review editor during his absence. Chief Curator Just continued as editor of *Lloydia* and member of the editorial board of *Evolution* and was appointed editor of *Paleobotanical Report*. Research Associate Sherff continued as a member of the editorial committee of *Brittonia*. Curator Patterson was appointed associate editor of *Evolution* and Curator Zangerl was made foreign editor of the *Society of Vertebrate Paleontology News*

Bulletin. Chief Curator Schmidt continued as herpetological editor of *Copeia*, section editor (amphibians and reptiles) of *Biological Abstracts*, and consulting editor (cold-blooded vertebrates) of *American Midland Naturalist* and was elected during the year to the editorial board of *Ecology*.

Publications of staff members during 1950 other than those issued by Chicago Natural History Museum included the following titles:

DEPARTMENT OF ANTHROPOLOGY

ALLEN, T. GEORGE

Occurrences of Pyramid Texts, with Cross Indexes of These and Other Egyptian Mortuary Texts (University of Chicago Press, No. 27 in Oriental Institute "Studies in Ancient Oriental Civilization"), vii+149 pages

COLLIER, DONALD

"Reconnaissance Notes on the Site of Huari, Near Ayacucho, Peru," *American Antiquity*, vol. 16, no. 2, pp. 120-137 [with John H. Rowe and Gordon R. Willey]

QUIMBY, GEORGE I.

"Archaeology, Western Hemisphere," in *1950 Britannica Book of the Year, A Record of . . . Events of 1949* (Chicago: Encyclopaedia Britannica, Inc.), pp. 54-56

"Historic Creek Pottery from Oklahoma," *American Antiquity*, vol. 15, no. 3, pp. 249-251 [with Alexander Spoehr]

SPOEHR, ALEXANDER

"Observations on the Study of Kinship," *American Anthropologist*, vol. 52, no. 1, pp. 1-15

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

"Frailejonal, típico cuadro de la vida vegetal en los páramos andinos.," *Revista de la Academia Colombiana de Ciencias*, vol. 7, pp. 457-461

"Gutíferas nuevas o poco conocidas de Colombia," *Anales del Instituto de Biología de México*, vol. 20, pp. 91-112

"Les espècies del gènere *Espeletia*," *Bulletí de la Institució Catalana d'Historia Natural*, vol. 37, pp. 30-41

"New and Noteworthy Colombian Trees," *Tropical Woods*, no. 96, pp. 37-47

"New Species of *Cecropia* and *Quararibea*," in "Plantae Colombianae XII" by Richard Evans Schultes, *Botanical Museum Leaflets* (Harvard University), vol. 14, pp. 24-27, 30-32

"Notas a la Flora de Colombia, *Guttiferae*," *Revista de la Academia Colombiana de Ciencias*, vol. 8, pp. 32-69

CUTLER, HUGH C.

"Methods of Popping Corn and Their Historical Significance," *Southwestern Journal of Anthropology*, vol. 6, no. 3, pp. 303-308, 1 plate, 2 figures [with Edgar Anderson]

DEPARTMENT OF BOTANY (*continued*)

DROUET, FRANCIS

"Myxophyceae" (identifications and descriptions), in *Plants of Bikini and Other Northern Marshall Islands* by William Randolph Taylor (University of Michigan Press, Volume 18 in University of Michigan Studies, Scientific Series), pp. 103-116

"Nomina Conservanda of genera of Myxophyceae" (note), in "Nomenclatural Principles and Rules in Reference to Certain Fungal and Algal Generic Names" (by Maxwell S. Doty), *Lloydia*, vol. 13, no. 1, pp. 9-10

JUST, THEODOR

"Carpels and Ovules," in *Families of Dicotyledons* by Alfred Gunderson (Waltham, Massachusetts: Chronica Botanica Company), pp. 12-17

"Mesozoic Plant Microfossils and Their Geological Significance" (abstract), *Annual Meetings, 1950* (The Society of Economic Paleontologists and Mineralogists), p. 39

Review of *Phyton, Annales Rei Botanicae* (edited by F. Weber and F. Widder), in *Quarterly Review of Biology*, vol. 25, no. 3, pp. 327-328

Review of *Practical Plant Anatomy* (by Adriance S. Foster), in *Quarterly Review of Biology*, vol. 25, no. 2, p. 225

STANDLEY, PAUL C.

"A New Cycad from Honduras," *Ceiba*, vol. 1, no. 1, pp. 36-38 [with Louis O. Williams]

"El Cipres Centroamericano," *Ceiba*, vol. 1, no. 3, pp. 180-185

"Henri François Pittier en Costa Rica," *Ceiba*, vol. 1, no. 3, pp. 131-135

"New Plants from Honduras," *Ceiba*, vol. 1, no. 1, pp. 38-49

"Plantae Centrali Americanae, I," *Ceiba*, vol. 1, no. 3, pp. 141-170 [with Louis O. Williams]

"Plantas Nuevas Hondureñas y Nicaraguenses," *Ceiba*, vol. 1, no. 2, pp. 74-96 [with Louis O. Williams]

"Teosinte in Honduras," *Ceiba*, vol. 1, no. 1, pp. 58-61

STEYERMARK, JULIAN A.

"Flora of Guatemala," *Ecology*, vol. 31, no. 3, pp. 368-372

"Missouri Towns with Plant Names," *Missouri Botanical Garden Bulletin*, vol. 38, no. 3, pp. 55-60

"Notes on *Geocarpon minimum* Mackenzie," *Bulletin of the Torrey Botanical Club*, vol. 77, no. 4, pp. 268-273

"Scarlet Oak in Missouri," *Missouri Botanical Garden Bulletin*, vol. 37, no. 8, pp. 143-145

"Wild Orchids of Missouri," *Missouri Botanical Garden Bulletin*, vol. 38, no. 4, pp. 61-64

"Yellow in the Early Spring," *Missouri Botanical Garden Bulletin*, vol. 38, no. 4, pp. 71-73

DEPARTMENT OF GEOLOGY

DENISON, ROBERT H.

"A New Arthrodire from the New York State Devonian," *American Journal of Science*, vol. 248, pp. 565-580

ZANGERL, RAINER

"Discovery of Early Cretaceous Mammals and Frogs in Texas," *Science*, vol. 112, no. 2898, p. 61 [with Robert H. Denison]

DEPARTMENT OF ZOOLOGY

HAAS, FRITZ

- "Hermit Crabs in Fossil Snail Shells in Bermuda," *Ecology*, vol. 31, p. 152
- "On Fresh Water Mollusks from the Amazonian Region," *Anales del Instituto de Biología de México*, vol. 20, pp. 301-316, 6 figures
- "On Some Deepsea Mollusks from Bermuda," *Butlletí de la Institució Catalana d'Historia Natural*, vol. 37, pp. 69-73, 6 figures
- "Some Land and Freshwater Mollusks from Pará State, Brazil," *Nautilus*, vol. 64, pp. 4-6

HERSHKOVITZ, PHILIP

- "Mammals of Northern Colombia, Preliminary Report No. 6: Rabbits (Leporidae), with Notes on the Classification and Distribution of the South American Forms," *Proceedings of the United States National Museum*, vol. 100, pp. 327-375, 2 maps

INGER, ROBERT F.

- "Distribution and Speciation of the Amphibians of the Riu Kiu Islands," *American Naturalist*, vol. 84, pp. 95-115, 4 maps, 3 figures

POPE, CLIFFORD H.

- "A Statistical and Ecological Study of the Salamander *Plethodon yonahlossee*," *Bulletin of the Chicago Academy of Sciences*, vol. 9, pp. 79-106, 5 figures
- "Reptiles," in *The Care and Breeding of Laboratory Animals*, edited by Edmond J. Farris (New York: John Wiley and Sons), pp. 299-330 (chapter 12)

RAND, AUSTIN L.

- "A New Race of Owl, *Otus bakkamoena*, from Negros, Philippine Islands," *Natural History Miscellanea*, no. 72, pp. 1-5
- "A New Race of the Philippine Creeper *Rhabdornis inornatus* (Class Aves)," *Natural History Miscellanea*, no. 59, pp. 1-3
- "Critical Notes on *Limnodromus semipalmatus*," *Condor*, vol. 52 pp. 228-231
- "Feather Replacement in Cassowaries," *Auk*, vol. 67, pp. 378-379
- "Notes on van Someren Collection," *Auk*, vol. 67, p. 258
- "On the Name *Francolinus sephaena spilogaster* Salvadori," *Auk*, vol. 67, pp. 384-385
- "The Amount of Overlap Allowable for Subspecies," *Auk*, vol. 67, pp. 169-183 [with Melvin A. Traylor, Jr.]
- "Three Rare Philippine Birds," *Natural History Miscellanea*, no. 60, pp. 1-5

SANBORN, COLIN CAMPBELL

- "A Nepal Record of the Long-eared Bat (*Plecotus homochrous* Hodgson), *Natural History Miscellanea*, no. 69, pp. 1-2
- "Chiroptera from Dundo, Lunda, Northeastern Angola," *Publicações Culturais da Companhia de Diamantes de Angola*, no. 10, pp. 51-62, 5 figures
- "New Philippine Fruit Bats," *Proceedings of the Biological Society of Washington*, vol. 63, pp. 189-190
- "Notes on the Malay Tapir and Other Game Animals in Siam," *Journal of Mammalogy*, vol. 31, pp. 430-433 [with A. Rush Watkins]
- "Small Rodents from Peru and Bolivia," *Publicaciones del Museo de Historia Natural "Javier Prado"*, Lima, Peru, Ser. A., Zoologica, no. 5, pp. 1-16

SCHMIDT, KARL P.

- "The Concept of Geographic Range, with Illustrations from Amphibians and Reptiles," *Texas Journal of Science*, vol. 2, pp. 326-334
- "Modes of Evolution Discernible in the Taxonomy of Snakes," *Evolution*, vol. 4, pp. 79-86, 2 figures
- "Wilfred Hudson Osgood, 1875-1947," *Auk*, vol. 67, pp. 183-189

THE BOOK SHOP

The popularity of the Book Shop was demonstrated by the fact that net sales for the year totaled more than \$42,000. It is worthy of note that sales each week between mid-May and mid-September amounted to more than \$1,000. The inventory was necessarily increased somewhat because of a number of authoritative new books that have appeared during the year and for which there has been an almost constant demand. An unexpected trend is the increase in the sale of novelties, particularly during the summer months when Museum visitors are to a large extent from outside the Chicago area. The increase in sales by mail indicates that there is a growing recognition by out-of-town purchasers that the Museum Book Shop can serve their needs through its good selection of authoritative books in the fields of natural history and anthropology.

CAFETERIA

Again the Museum achieved a new record in the number of persons served in its cafeteria and lunchroom. An increase of more than 25,000 persons brought the total number served this year to 281,954. Total receipts also increased but not in proportion to the increase in attendance. Changes in the service areas in the lunchroom have noticeably cut down the length of time needed to serve each individual. Procedures are constantly under study in order that the greatest number of persons may be served with the least delay.

MAINTENANCE, CONSTRUCTION, AND ENGINEERING

It is difficult to report accurately the tremendous volume of work done by the Division of Maintenance and the Division of Engineering. Every change in the exhibition halls, every office alteration, and every special exhibition make demands upon them. Exhibition cases must be constructed and moved into position, electrical circuits must be provided in accessible locations, every large shipment leaving the Museum must be boxed or crated, and even changes in weather place new duties on these divisions. Under these circumstances it should be understood that any factual report of their accomplishments must at best be incomplete.

In connection with the reconditioning of Mary D. Sturges Hall (Hall 5) many exhibition cases were remodeled and painted gray instead of black, and poison pans were installed to protect the

exhibits from possible attack by insects. The old exhibition cases were removed from the west half of Clarence Buckingham Hall (Hall 35, Rocks and General Geology). The Division of Fishes was moved from its quarters on the third floor to a location on the ground floor (see page 19). The service counter in the lunchroom was remodeled, and a rubber-tile floor was installed in the cafeteria. Extensive measures for the extermination of termites were continued throughout the building. Sash and window frames were repaired, all exterior woodwork was painted, and a new numbering system was adopted for identifying the hundreds of window screens used in the building. A concrete ramp was constructed at the outside entrance of the shipping room for better handling of wheel chairs.

The modernization of the boiler room begun last year was completed (see page 19). All piping and exposed steel work were painted, a hot-water heater with automatic controls was installed, the boilers and breeching were cleaned, and the pumps were repaired. A large crack in the breeching just inside the building line, resulting from

James R. Shouba, Superintendent of Maintenance, Loren P. Woods, Curator of Fishes, Robert F. Inger, Assistant Curator of Fishes, and Robert Kanazawa, Assistant (since resigned), check over the plans for the new quarters of the Division of Fishes.



settlement, came to light during the heavy spring rains. In order to repair this damage it was necessary to break open the cement floor, install a permanent manhole, and replace the broken section of the downspout line. The freight elevator was rebuilt, and the gears, which had been in use for thirty-one years, were replaced. Exhaust fans were installed on the fourth floor in the workroom of Joseph B. Krstolich, Artist in Zoology, to remove fine plastic dust, on the third floor in the Division of Photography and the Division of Motion Pictures, and on the second floor in the Meeting Room, and air ducts were connected with the skin-storage rooms in the Division of Taxidermy in order to avoid the high temperatures that might damage the skins. Fluorescent lighting fixtures were installed in the poison rooms on the fourth floor, in the classroom on the ground floor, and in new wall cases in several exhibition halls, and vapor-proof lights were substituted for the old lights in the hood over the cooking range in the cafeteria to lessen danger of fire. Under contracts in force 16,001,328 pounds of steam were furnished to the Chicago Park District and 16,011,500 pounds to the John G. Shedd Aquarium, a total of 32,012,828 pounds delivered.

MISCELLANEOUS

In the pages that follow are submitted the Museum's financial statements, attendance statistics, door receipts, accessions, list of Members, articles of incorporation, and amended by-laws.

CLIFFORD C. GREGG, *Director*
Chicago Natural History Museum

COMPARATIVE FINANCIAL STATEMENTS

FOR YEARS 1949 AND 1950

INCOME	1950	1949
Endowment funds.....	\$715,206.23	\$708,582.49
Life Membership Fund.....	10,707.04	9,723.03
Associate Membership Fund..	14,399.79	12,891.34
Chicago Park District.....	128,776.81	134,003.04
Annual and Sustaining Mem- berships.....	19,880.00	19,125.00
Admissions.....	30,310.25	30,694.75
Sundry receipts.....	29,179.59	23,927.77
Contributions, general pur- poses.....	1,671.50	886.83
Contributions, special pur- poses (expended <i>per contra</i>)	28,624.59	25,927.67
Special funds—part expended for purpose designated (in- cluded <i>per contra</i>).....	15,230.09	17,894.10
	<u>\$993,985.89</u>	<u>\$983,656.02</u>

EXPENDITURES		
Collections.....	\$ 17,976.48	\$ 41,417.37
Operating expenses capitalized and added to collections..	75,141.85	67,114.92
Expeditions.....	21,506.86	42,645.34
Furniture, fixtures, etc.....	54,536.76	11,116.06
Wages capitalized and added to fixtures.....	2,785.84	4,718.70
Pensions and group insurance..	72,620.66	74,830.94
Departmental expenses.....	105,501.80	89,171.29
General operating expense....	520,451.01	519,799.74
Building repairs and alterations	118,653.06	130,701.90
Reserve for building repairs and mechanical plant de- preciation.....	10,000.00
	<u>\$999,174.32</u>	<u>\$981,516.26</u>
Balance.....		\$ 2,139.76
Deficit....	<u>\$ 5,188.43</u>	<u>.....</u>

The N. W. Harris Public School Extension

	1950	1949
Income from endowments....	\$ 19,625.98	\$ 18,328.29
Expenditures.....	20,489.72	21,932.94
Deficit.....	<u>\$ 863.74</u>	<u>\$ 3,604.65</u>

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1949 AND 1950

	1950		1949
Total attendance.....	1,173,661		1,145,359
Paid attendance.....	121,241		122,779
Free admissions on pay days:			
Students.....	31,474		26,923
School children.....	81,601		79,487
Teachers.....	3,675		2,974
Members.....	531		455
Service men and women.....	1,061		1,380
Special meetings and occasions....	4,083		2,096
Admissions on free days:			
Thursdays (52).....	161,721	(51)	145,902
Saturdays (52).....	309,188	(52)	302,946
Sundays (52).....	459,086	(51)	460,417
Highest attendance on any day			
(September 3).....	13,889	(September 4)	11,859
Lowest attendance on any day			
(December 6).....	98	(December 16)	169
Highest paid attendance (September 4)	3,100	(September 5)	3,739
Average daily admissions (363 days)...	3,233	(363 days)	3,155
Average paid admissions (207 days)...	586	(209 days)	587
<hr/>			
Copies of <i>General Guide</i> sold.....	21,722		22,207
Number of articles checked.....	31,802		33,763
Number of picture post cards sold.....	177,051		168,862
Sales of Museum publications (both scientific and popular) and photo- graphs; rental of wheel chairs.....	\$13,177.60		\$10,387.98

ACCESSIONS, 1950

DEPARTMENT OF ANTHROPOLOGY—ACCESSIONS

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Paul S. Martin (Southwest Archaeological Expedition, 1950): about 2,130 specimens, including clay, bone, shell, and stone artifacts, as well as perishable articles made of wood, cane, leather, and woven sandals and cloth, also "mummies"—Tularosa Cave, near Reserve, New Mexico

Collected by Dr. Alexander Spoehr (Micronesia Anthropological Expedition, 1949–50): pottery vessels and sherds; stone, bone, and shell artifacts; and prehistoric human and animal skeletal material—Saipan, Tinian, and the Palau Islands

Purchases: 1 old beaded shoulder bag and 1 old beaded hair ornament, both Sauk and Fox—Tama, Iowa

GRIER, MRS. SUSIE I., ESTATE OF, Maywood, Illinois: 65 ethnological

specimens—North American Indian (gift)

McCLUN, MRS. JOHN M., Chicago: 8 Egyptian scarabs, 5 strings of Egyptian glass and faience beads, 3 small strings of miscellaneous Egyptian beads, 1 pair of Etruscan earrings—Egypt and Italy (gift)

McCUTCHEON, MRS. JOHN T., Lake Forest, Illinois: 1 book made from palm or dandanus leaves, with inscription in Sanskrit(?)—probably Indian (gift)

MOREY, DR. CHARLES W., Chicago: pottery vessel in form of four fruits joined to central spout—Peru (gift)

PELAEZ, VINICIO R., Cebu City, Philippine Islands: 1 bronze Japanese statue—Philippine Islands (gift)

RANSOM, ROBERT M., Oak Park, Illinois: drum of wood, with hide head, Choco Indians—Colombia (gift)

DEPARTMENT OF BOTANY—ACCESSIONS

ABBOTT, DR. ISABELLA A., Pacific Grove, California: 109 specimens of algae (gift)

ADELAIDE, UNIVERSITY OF, Adelaide, Australia: 300 specimens of algae (exchange)

BARMACK, MRS. B. J., Chesterton, Indiana: 2 specimens of fungi (gift)

BAYALIS, JOHN, Chicago: 2 specimens of fungi (gift)

BERNICE P. BISHOP MUSEUM, Honolulu, Hawaii, T.H.: 994 plant specimens (exchange)

BLUM, DR. JOHN L., Buffalo: 153 specimens of algae (gift)

BOTANISCHE STAATSSAMMLUNG, Munich, Germany: 85 plant specimens (exchange)

BUCHHOLZ, DR. JOHN T., Urbana, Illinois: 2 photographic prints, 1 plant specimen (gift)

BURPEE SEED COMPANY, Philadelphia: 81 legume-seed packets (gift)

BUTLER UNIVERSITY, Indianapolis: 30 plant specimens (exchange)

CALHOUN, BARBARA, Milwaukee: 82 plant specimens (gift)

CALIFORNIA, UNIVERSITY OF, Berkeley: 289 cryptogamic specimens (gift); 1,077 plant specimens, 367 specimens of algae (exchange)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco: 110 plant specimens (exchange)

CAMP, EARL, Iowa City, Iowa: 2 plant specimens (gift)

CATHOLIC UNIVERSITY OF AMERICA, Washington, D.C.: 17 plant specimens (gift)

CHAMBERS, T. C., Auckland, New Zealand: 3 specimens of algae (gift)

CHAPMAN, DR. V. J., Auckland, New Zealand: 6 specimens of algae (gift)

CHASE, VIRGINIUS H., Peoria Heights, Illinois: 275 plant specimens (exchange)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Hugh C. Cutler (Southwest Botanical Expedition, 1949): 312 plant specimens

Collected by D. Dwight Davis and Robert F. Inger (Borneo Zoological Expedition, 1950): 5 plants of North Borneo

Collected by Henry S. Dybas (Southeastern States Zoological Field Trip, 1949): 113 specimens of fungi

Collected by Paul C. Standley (Middle Central America Botanical Expedition, 1948-50): 30,000 plant specimens

Purchases: 500 plant specimens—Spain; 649 plant specimens—Peru; 2,300 plant specimens—southern Mexico; 200 plant specimens—South Africa; 115 plant specimens—Colombia; 500 plant specimens—Formosa and Japan; 126 plant specimens—United States, West Indies, Central America, and South America; 573 wood specimens—Ecuador

COLEGIO SALESIANO, Lima, Peru: 60 plant specimens (gift)

COLORADO, UNIVERSITY OF, MUSEUM, Boulder: 1 plant specimen and reprint of original description (gift)

COOK, DR. MELVILLE T., Baton Rouge, Louisiana: 4 cryptogamic specimens (gift)

CULBERSON, WILLIAM, Cincinnati: 39 cryptogamic specimens (gift)

CUMMINS, DR. GEORGE, Lafayette, Indiana: 1 plant specimen (gift)

CUTLER, DR. HUGH C., Chicago: 277 plant specimens, 73 cryptogamic specimens (gift)

DAHLGREN, DR. B. E., Chicago: 10 plant specimens (gift)

DAILY, MRS. FAY K., Indianapolis: 12 plant specimens (gift)

DAILY, WILLIAM A., Indianapolis: 118 specimens of algae (exchange)

DAVIS, DR. JARED J., Richland, Washington: 1 cryptogamic specimen (gift)

DILLER, DR. VIOLET M., Cincinnati: 50 algal cultures (gift)

DOMINION BOTANIST, THE, Ottawa, Ontario, Canada: 25 plant specimens (exchange)

DOTY, DR. MAXWELL S., Evanston, Illinois: 5 cryptogamic specimens, 400 specimens of fungi (gift)

DOWNING, GLENN R., Battle Creek, Michigan: 1 plant specimen (gift)

DROUET, DR. FRANCIS, Chicago: 4 plant specimens (gift)

DURHAM, O. C., North Chicago, Illinois: 1 plant specimen (gift)

DYBAS, HENRY S., Chicago: 27 specimens of fungi (gift)

ESCUELA AGRÍCOLA PANAMERICANA, Tegucigalpa, Honduras: 5,164 plant specimens (exchange)

FASSETT, DR. NORMAN C., Madison, Wisconsin: 3 plant specimens (gift); 78 plant specimens (exchange)

FISHER, GEORGE L., Houston, Texas: 8 specimens of algae (gift)

FRIESNER, RAY C., Indianapolis: 71 cryptogamic specimens (exchange)

FULLER, DR. GEORGE D., Springfield, Illinois: 93 plant specimens (exchange)

GAISER, DR. LULU O., Cambridge, Massachusetts: 4 plant specimens (gift)

GIBBS, DR. R. D., Montreal, Quebec, Canada: 2 specimens of algae (gift)

GIER, DR. L. J., Liberty, Missouri: 46 specimens of algae (gift)

GLASSMAN, DR. SIDNEY F., Chicago: 31 cryptogamic specimens, 553 plant specimens (gift)

HABEEB, DR. HERBERT, Grand Falls, New Brunswick, Canada: 58 cryptogamic specimens (exchange)

HARVARD UNIVERSITY, Cambridge, Massachusetts: 341 plant specimens (gift); 421 plant specimens (exchange)

HATHEWAY, WILLIAM H., Waialua, Oahu, Hawaii, T.H.: 102 plant specimens (gift)

HERMANN, DR. F. J., Beltsville, Maryland: 1 plant specimen (gift)

HERTER, DR. W. G., Bern, Switzerland: 1 plant specimen (gift)

HILDEBRAND, B. G., Brooklyn: 15 wood specimens (exchange)

HODGE, DR. WALTER H., Amherst, Massachusetts: 50 plant specimens (exchange)

HOGSHEAD, RAYMOND C., North Miami, Florida: 3 plant specimens (gift)

HUMM, DR. HAROLD J., Tallahassee, Florida: 1 cryptogamic specimen, 2 specimens of algae (gift)

ILLINOIS, UNIVERSITY OF, Chicago: 1,874 plant specimens (gift)

ILLINOIS, UNIVERSITY OF, Urbana: 14 plant specimens (gift)

ILLINOIS STATE MUSEUM, Springfield: 92 plant specimens (gift)

ILTIS, DR. HUGH, St. Louis: 1 cryptogamic specimen (gift)

INSTITUTO GEOBIOLOGICO, Porto Alegre, Brazil: 42 plant specimens (exchange)

INSTITUTO MIGUEL LILLO, Tucumán, Argentina: 1 plant specimen (gift); 1,793 plant specimens (exchange)

JARDIN BOTANIQUE, Brussels, Belgium: 1 plant specimen (exchange)

JOHNS HOPKINS UNIVERSITY, Baltimore, Maryland: 7,059 plant specimens, 2,600 cryptogamic specimens (gift)

JOHNSON, DR. LESLIE, Chicago: 3 specimens of fungi (gift)

JONES, DR. G. NEVILLE, Urbana, Illinois: 1 plant specimen (gift)

KELLY, ISABEL, Mexico, D.F.: 55 plant specimens (gift)

KIENER, DR. WALTER, Lincoln, Nebraska: 508 specimens of algae (gift); 160 specimens of algae (exchange)

LEWIN, RALPH A., New Haven, Connecticut: 3 specimens of algae (gift)

LINDSEY, DR. ALTON A., Lafayette, Indiana: 3 specimens of algae (gift)

LOUDERBACK, HAROLD B., Argo, Illinois: 4 specimens of algae (gift)

MACBRIDE, J. FRANCIS, Stanford University, California: 44 plant specimens (gift)

MADSEN, DR. GRACE C., Tallahassee, Florida: 117 specimens of algae (gift)

MALDONADO, PROFESSOR ANGEL, Lima, Peru: 12 specimens of algae (gift)

MARTINEZ, PROFESSOR MAXIMINO, Mexico, D.F.: 1 plant specimen (gift)

MATUDA, EIZI, Mexico, D.F.: 83 plant specimens (gift); 110 plant specimens (exchange)

MAY, DR. VALERIE, Sydney, Australia: 14 cryptogamic specimens (gift)

MERRILL, DR. ELMER D., Jamaica Plain, Massachusetts: 1 plant specimen (gift)

MICHIGAN, UNIVERSITY OF, Ann Arbor: 144 cryptogamic specimens, 699 plant specimens (exchange)

MICHIGAN STATE COLLEGE, East Lansing: 6 wood specimens (exchange)

MISSOURI BOTANICAL GARDEN, St. Louis: 22 plant specimens (gift); 3,755 plant specimens (exchange)

MOLDENKE, DR. HAROLD N., New York: 51 photographic prints, 35 plant specimens (exchange)

MONCURE, ROBERT C., Guatemala, Guatemala: 1 plant specimen (gift)

MOORE, DR. DWIGHT, Fayetteville, Arkansas: 1 plant specimen (gift)

MORRISON, DR. WARREN, Chicago: 2 plant specimens, 3 cryptogamic specimens (gift)

MUSEO DE CIENCIAS NATURALES, Caracas, Venezuela: 400 plant specimens (exchange)

MUSEO NACIONAL, San José, Costa Rica: 366 plant specimens (gift)

MUSEO NACIONAL DE HISTORIA NATURAL, Santiago, Chile: 1,256 photographic prints (exchange)

NATIONAL MUSEUM, Manila, Philippine Islands: 812 plant specimens (exchange)

NATURAL RESOURCES SECTION, DIVISION OF FORESTRY, San Francisco: 40 wood specimens (gift)

NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden: 1,617 plant specimens (exchange)

NELSON, MRS. NATALIE C., Chicago: 2 specimens of fungi (gift)

NEW YORK BOTANICAL GARDEN, New York: 22 specimens of algae, 216 plant specimens, 10 photographic prints (gift); 375 plant specimens, 44 photographic prints (exchange)

NIELSEN, DR. CHESTER S., Tallahassee, Florida: 131 specimens of algae (gift)

NIELSEN, DR. CHESTER S., Tallahassee, Florida, AND WILLIAM L. CULBERSON, Cincinnati: 82 specimens of algae (gift)

NOGLE, HAROLD, Port Arthur, Texas: 67 wood specimens (exchange)

NORVELL, OLIVER, Stanford University, California: 58 plant specimens (gift)

OAKES, ORVILLE A., Winnetka, Illinois: 1 wood specimen (gift)

OHLENDORF, DR. WILLIAM C., Park Ridge, Illinois: 136 botanical books, 2,788 plant specimens (gift)

OSBORN, DR. BEN O., San Angelo, Texas: 2 specimens of algae (gift)

PALUMBO, DR. RALPH, Philadelphia: 20 specimens of algae (gift)

PATRICK, DR. RUTH, Philadelphia: 133 plant specimens (gift)

PHILADELPHIA ACADEMY OF NATURAL SCIENCES, Philadelphia: 17 plant specimens (gift); 15 specimens of algae (exchange)

PHILIPPINES, UNIVERSITY OF THE, Quezon City, Philippine Islands: 631 specimens of algae (exchange)

PICHI-SERMOLLI, PROFESSOR RODOLFO, University of Florence, Florence, Italy: 100 plant specimens (exchange)

PLANT INDUSTRY STATION, Beltsville, Maryland: 730 plant specimens (exchange)

QUEENSLAND, UNIVERSITY OF, Brisbane, Australia: 55 specimens of algae (exchange)

RICHARDS FUND, DONALD: 199 cryptogamic specimens from Mt. Shasta, 909 cryptogamic specimens, 424 specimens of moss from Finnish Lapland, 383 specimens of moss and lichens from Finland, 50 specimens of fungi from North America, 275 cryptogamic specimens from Alaska

RICHARDSON, EUGENE S., JR., Winnetka, Illinois: 1 cryptogamic specimen (gift)

RIJKSHERBARIUM, Leiden, Netherlands: 860 specimens of algae, 1,439 cryptogamic specimens (exchange)

ROGERS, DR. D. P., New York: 38 specimens of algae (gift)

ROSS, LILLIAN A., Chicago: 11 cryptogamic specimens (gift)

ROUSSEAU, DR. JACQUES, Montreal, Quebec, Canada: 8 specimens of algae (gift)

RUBINSTEIN, DR. AND MRS. JOSEPH, Chicago: 2 cryptogamic specimens (gift)

RUTGERS UNIVERSITY, New Brunswick, New Jersey: 68 cryptogamic specimens (exchange)

SANBORN, COLIN C., Highland Park, Illinois: 26 plant specimens (gift)

SCHALLERT, DR. PAUL O., Altamonte Springs, Florida: 22 specimens of algae (gift)

SCHMIDT, KARL P., Homewood, Illinois: 1 cryptogamic specimen (gift)

SCOTT, MILTON, Miami, Florida: 77 wood specimens (exchange)

SELLA, EMIL, Chicago: 5 specimens of fungi (gift)

SENN, DR. HAROLD A., Ottawa, Ontario, Canada: 18 specimens of algae (gift)

SHERFF, DR. EARL E., Chicago: 1,987 plant specimens (gift)

SILVA, HERMAN, East Lansing, Michigan: 247 specimens of algae (gift)

SILVA, PAUL C., Berkeley, California: 31 specimens of algae (gift)

TAYLOR, DR. WILLIAM RANDOLPH, Ann Arbor, Michigan: 21 specimens of algae (gift)

TENNESSEE, UNIVERSITY OF, Knoxville: 25 plant specimens (gift)

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE, Madison, Wisconsin: 266 wood specimens (exchange)

UNITED STATES DEPARTMENT OF AGRICULTURE, Beltsville, Maryland: 10 pounds of Chilean wood (gift)

UNITED STATES NATIONAL HERBARIUM, Washington, D.C.: reprints, 3 parts (exchange)

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 2 plant specimens (gift)

UNIVERSIDAD DEL CUZCO, Cuzco, Peru: 19 plant specimens, 26 ears of corn (gift)

WHITEHOUSE, DR. EULA, Dallas, Texas: 74 specimens of algae (gift)

WILLIAM JEWELL COLLEGE, Liberty, Missouri: 82 plant specimens (gift)

WILSON, ARCHIE F., Flossmoor, Illinois: 10 plant specimens (gift); 12 wood specimens (exchange)

WILTON, MRS. HENRY G., Arlington, Massachusetts: 3 ears of corn (gift)

WISNIEWSKY, DR. A., Belém, Pará, Brazil: 4 plant specimens (exchange)

WOMERSLEY, DR. H. B. S., Adelaide, Australia: 35 specimens of algae (gift)

YALE UNIVERSITY, New Haven, Connecticut: 28 plant specimens (gift)

DEPARTMENT OF GEOLOGY—ACCESSIONS

AMERICAN MUSEUM OF NATURAL HISTORY, New York: cast of *Pantolambda bathmodon*—New Mexico (exchange)

BRIDWELL, L. H., Forestburg, Texas: vertebrate jaw fragment—Texas (gift)

CHALMERS CRYSTAL FUND: 6 witherite crystals—Illinois (gift)

CHICAGO, UNIVERSITY OF, Chicago: 3 fossil reptile specimens—Texas (gift)

CHICAGO NATURAL HISTORY MUSEUM: Collected by Dr. Robert H. Denison, William D. Turnbull, and Priscilla F. Turnbull (Utah Paleontological Expedition, 1950): 500 fossil-fish specimens—various localities

Collected by Celestini Kalinowski: 1 trilobite—Peru

Collected by George Langford (Wilmingtong, Illinois, Paleobotanical Field Trips, 1950): 847 fossil-plant specimens, 41 fossil invertebrates—Will County, Illinois

Collected by George Langford and Eugene S. Richardson, Jr. (Tennessee Paleobotanical Field Trip, 1950): 1,463 fossil-plant specimens, 1 fossil insect—various localities

Collected by Bryan Patterson and Dr. Rainer Zangerl (Texas Paleontological Expedition, 1950): collection of microfauna of fish, amphibians, reptiles, and mammals—Texas; 773 fossil invertebrates—Arkansas

Collected by Eugene S. Richardson, Jr. (Wyoming Invertebrate Paleontological Field Trip, 1950): collection of invertebrate fossils and 15 fossil fish—South Dakota and Wyoming

Collected by Robert K. Wyant (Mississippi Valley Geological Field Trip, 1950): 248 specimens of minerals, rocks, and ores—various localities

Collected by Dr. Rainer Zangerl (Alabama Paleontological Field Trip, 1950): 1 fossil turtle—Alabama; (Texas Paleontological Expedition, 1950): 459 invertebrate fossils—Texas

Purchases: 312-gram fragment of Keyes meteorite, 1,802 specimens of invertebrate fossils, collection of vertebrate fossils, 1 fossil jellyfish—various localities

COLOMBIA, CONSUL OF, Colombia: 123 metallic and nonmetallic ores, 17 lithology specimens—Colombia (gift)

DARLING, M. L., Detroit: specimen of native copper—Michigan (gift)

DARTMOUTH COLLEGE MUSEUM, Hanover, New Hampshire: 7 fossil fish-

head shields, 15 casts of fossil fish—Estonia (exchange)

DAVIS, MORGAN, Houston, Texas: gypsum crystals with sand inclusions—Texas (gift)

FELTWELL, H. V., Altoona, Pennsylvania: fossil impression of part of trunk of giant club-moss—Pennsylvania (gift)

HARD, ALLEN M., Tuscaloosa, Alabama, AND ROBERT H. HARD, Flint, Michigan: fossil-turtle fragments—Alabama (gift)

HUTCHINSON, JOSEPH, Morena, Arizona: 11 pieces of agate—Arizona (gift)

MICHIGAN, UNIVERSITY OF, Ann Arbor: collection of 73 invertebrate fossils—various localities (exchange)

PROELL, WAYNE, Chicago: rhinoceros skull—South Dakota (gift)

ROWLEY, ELMER B., Glen Falls, New York: 9 mineral specimens—various localities (exchange)

SASKATCHEWAN PROVINCIAL MUSEUM, Regina, Saskatchewan, Canada: *Hyacodon* jaw—Canada (gift)

SCHMIDT, KARL P., Homewood, Illinois: loess concretion—Germany (gift)

SINCLAIR, G. WINSTON, Ann Arbor, Michigan: *Anacondularia anomala*—Bohemia (gift)

TENNESSEE, UNIVERSITY OF, Knoxville: plaster cast of four peripherals and partial plastron of *Toxochelys weeksi*—Tennessee (gift)

TEXAS MEMORIAL MUSEUM, Austin: *Trilophosaurus* skeleton—Texas (exchange)

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 7 meteorites—various localities (exchange)

WHITFIELD, DR. AND MRS. R. H., AND JON S. WHITFIELD, Evanston, Illinois: 950 fossil plant specimens, 1 fossil invertebrate—various localities (gift)

WRAY, O. R., Moranda, Quebec, Canada: specimen of dalmatianite—Canada (gift)

ZANGERL, DR. AND MRS. RAINER, Hazelcrest, Illinois: 1 miacid jaw—Utah (gift)

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ABBOTT, R. TUCKER, Washington, D.C.: collection of malacological pamphlets (exchange)

ABOULAFIA, LEON R., Tel Aviv, Israel: 1 mammal, 10 reptiles—Israel (gift)

ACOSTA Y LARA, EDUARDO, Montevideo, Uruguay: 7 mammals—Brazil (gift)

ADAMS, PHILLIP A., Berkeley, California: 38 insects—various localities (exchange)

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 2 birds—Argentina (exchange)

AMERICAN TELEPHONE AND TELEGRAPH COMPANY, New York: 1 complete set of climbing equipment (gift)

AUERBACH, DR. STANLEY, Evanston, Illinois: 164 insects and their allies—United States (gift)

BENESH, BERNARD, Sunbright, Tennessee: 310 insects—Tennessee (gift)

BERG, DR. CLIFFORD O., Delaware, Ohio: 2 vials of insects—Michigan (gift)

BERGSTROM, DAVID, Albuquerque, New Mexico: 81 lower invertebrates—Tennessee (gift)

BORRERO, J. I., Bogotá, Colombia: 7 birds—Colombia (exchange)

BRADBURY, MARGARET G., AND PHYLLIS A. MADDEN, Chicago: 2,823 fishes—Illinois (gift)

BRODIE, LAURA, Chicago: 1 mammal skeleton, 89 fishes—South Carolina (gift)

BRODIE, LAURA, AND MARGARET G. BRADBURY, Chicago: 211 amphibians—South Carolina (gift)

BUCHEN, WALTHER, Chicago: 1 bird—Africa (gift)

BUCHEN FUND, WALTHER: 132 mammals—Africa (gift)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco: 47 insects—various localities (exchange)

CAMRAS, DR. SIDNEY, Chicago: 1,178 insects—United States (gift)

CARDONA, CAPTAIN FELIX, Caracas, Venezuela: 219 insects—Venezuela (gift)

CARPENTER, SUSAN M., Chicago: 1 annelid worm tube—Florida (gift)

CHAO, HSIU-FU, Amherst, Massachusetts: 1 insect paratype—China (gift)

CHICAGO, UNIVERSITY OF, DEPARTMENT OF ZOOLOGY, Chicago: 1 amphibian—Illinois (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Francis Drouet and others (Gulf States Botanical Expedition, 1948–49): 62 lower invertebrates—Florida

Collected by Henry S. Dybas and Robert F. Inger (local field work): 136 insects—Indiana

Collected by Philip Hershkovitz (Colombia Zoological Expedition, 1948–51): 39 reptiles and amphibians, 284 insects and their allies—Colombia

Collected by Harry Hoogstraal and others (Philippines Zoological Expedition, 1946–47): 10,715 insects and their allies, 43 lots of lower invertebrates—Philippine Islands

Collected by Bryan Patterson (Texas Paleontological Expedition, 1950): 2 reptiles—Texas

Collected by Clifford H. Pope and Sarah Pope (Appalachian and Ouachita Mountains Zoological Field Trip, 1950): 264 reptiles and amphibians—Oklahoma and Arkansas

Collected by D. S. Rabor (Philippine Islands field work): 365 mammal skins and skulls, 41 mammals in alcohol, 1 mammal skull, 672 birds, 439 reptiles and amphibians—Philippine Islands

Collected by Eugene S. Richardson, Jr. (Wyoming Invertebrate Paleontological Field Trip, 1950): 30 lower invertebrates—Wyoming

Collected by Colin C. Sanborn (Arkansas Zoological Field Trip, 1950): 24 mammals, 14 reptiles and amphibians, 21 lower invertebrates—Arkansas

Collected by Karl P. Schmidt (field work in Germany): 17 mammals, 115 reptiles and amphibians—Germany

Collected by Leon L. Walters and Ronald J. Lambert (Gulf States Zoological Field Trip, 1950): 54 reptiles and amphibians—southeastern United States

Collected by A. Rush Watkins, Colin C. Sanborn, and Frank C. Wonder (Rush Watkins Siam Zoological Expedition, 1949): 138 reptiles and amphibians, 86 insects and their allies—Siam

Collected by Rupert L. Wenzel, Rodger D. Mitchell, and Luis de la Torre (Guatemala Zoological Expedition, 1948): 2,636 insects and their allies—Guatemala

Collected by Loren P. Woods and family (Florida Keys Fish-Collecting Trip, 1949–50): 711 marine fishes—Florida

Collected by Loren P. Woods and Robert F. Inger (Field Work for Cave Fishes, 1950): 17 mammals, 9 reptiles and amphibians, 638 fishes, 18 lots of lower invertebrates—United States

Collected by various Museum workers and volunteers (from animals brought in for Museum collection): 3,920 insects and their allies

Purchases: 489 mammal skins and skulls, 242 mammals in alcohol, 32 mammal skulls, 1 mammal skin and skeleton, 2 mammal skeletons, 16,193 bird skins, 1 set of bird eggs, 409 reptiles and amphibians, 299 fishes, 6,987 insects and their allies, 263 lots of lower invertebrates

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 26 mammals, 39 birds, 2 bird eggs—various localities (gift)

CHOATE, JERRY, Big Spring, Texas: 1 reptile—Texas (gift)

CLEVELAND, THOMAS C., Homewood, Illinois: 1 reptile—Illinois (gift)

COMPANHIA DE DIAMANTES DE ANGOLA, Porto, Portugal: 100 mammals in alcohol—Angola (gift)

CONOVER, BOARDMAN (deceased): 1 bird skeleton—Illinois (gift)

CONOVER, BOARDMAN, ESTATE OF, Chicago: approximately 18,000 game birds—worldwide (gift)

DERANIYAGALA, DR. P. E. P., Colombo, Ceylon: 2 reptiles—Ceylon (exchange)

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DUCKWORTH, N. H., Chicago: 1 reptile—Borneo (gift)

DYBAS, HENRY S., Hazelcrest, Illinois: 3,456 insects and their allies—various localities (gift)

EIGSTI, WILBUR E., Hastings, Nebraska: 74 insects—Nebraska (gift)

ELIAS, DR. HANS, Chicago: 5 fishes—Florida (gift)

ENGLISH, DR. (full name lacking), Miami, Florida: 1 mammal—Florida (gift)

FELTON, HEINZ, Frankfort-on-Main, Germany: 9 mammals—Germany (gift)

FIGUEROA, MAURO CARDENAS, Mexico, D.F., 3 reptiles—Mexico (gift)

FLEMING, ROBERT, Mussoorie, India: 133 insects and their allies—India (gift)

FLOHR, RICHARD (address lacking): 1 fish—Florida (gift)

FRIESSER, JULIUS, Chicago: 1 mammal skull—Brazil (gift)

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GOODNIGHT, DR. AND MRS. CLARENCE J., Lafayette, Indiana: 84 insects and their allies, including 2 paratypes—Mexico (gift)

GORGES, A. J., Eagleton, Arkansas: 5 reptiles—Arkansas (gift)

GOSLINE, WILLIAM A., University of Hawaii, Honolulu, Hawaii, T.H.: 6 fishes—Hawaii (exchange)

GREELEY, FREDERICK, Madison, Wisconsin: 9 mammals—Wisconsin (gift)

GREEMAN, O. W., Marion, Kentucky: 1 mammal—Kentucky (gift)

HASSLER, WILLIAM G., Nashville, Tennessee: 1 amphibian—tropical America (gift)

HENSON, DANIEL G., JR., Eagleton, Arkansas: 1 reptile—Arkansas (gift)

HILDEBRANDT, R. E., Maywood, Illinois: 1 mammal skull—Florida (gift)

HOOGSTRAAL, HARRY, Cairo, Egypt: 301 mammals, 481 birds, 377 amphibians and reptiles, 5,524 insects and their allies (including 271 paratypes), 1,278 prepared insect microscope slides, 12 lower invertebrates—Egypt (gift)

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NEW YORK ZOOLOGICAL SOCIETY, New York: 1 bird—Belgian Congo (gift)

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PARKMAN, MACY, Mt. Sterling, Illinois: 1 bird—Illinois (gift)

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PATTERSON, BRYAN, AND ALAN PATTERSON, Park Forest, Illinois: 500 insects and their allies—Florida (exchange); 40 insects—Illinois (gift)

PEABODY MUSEUM, Cambridge, Massachusetts: 86 fishes, 10 lots of lower invertebrates—southwest Asia (gift)

PENA, COLONEL LUIS E., Santiago, Chile: 1 fish, 2 insect paratypes—Bolivia and Chile (gift)

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ROSS, LILLIAN A., Chicago: 2 reptiles and 1 amphibian, 126 insects and their allies, 6 lower invertebrates—Cuba and United States (gift)

RUSSELL, RICHARD, Belleville, Illinois: 14 lower invertebrates—Illinois (gift)

SANBORN, COLIN C., Highland Park, Illinois: 1 bird—Illinois (gift)

SANDERSON, IVAN T. (address lacking): 1 fish—Yucatan (gift)

SCHLESCH, DR. HANS, Copenhagen, Denmark: 10 lower invertebrates—various localities (gift)

SCHMIDT, KARL P., Homewood, Illinois: 9 lots of lower invertebrates—Germany (gift)

SCHWENGEL, DR. JEANNE S., Greenwich, Connecticut: 191 lower invertebrates (including 2 paratypes)—various localities (gift)

SCOTT DE BIRABEN, DR. M. I. HYLTON, La Plata, Argentina: 431 lower invertebrates (including 6 paratypes)—Argentina (exchange)

SEEVERS, DR. CHARLES H., Homewood, Illinois: 137 insects—North America (gift)

SENCKENBERG MUSEUM, Frankfurt-on-Main, Germany: 7 reptiles—Australia and Madagascar (exchange)

SHEDD AQUARIUM, JOHN G., Chicago: 92 fishes—worldwide (gift)

SHIRK, JOSEPH H., Peru, Indiana: 3 mammal skulls—Arizona (gift)

SHOEMAKER, DR. HURST: Champaign, Illinois: 1 lower invertebrate—Gulf of Mexico (gift)

SIGISMUND OF PRUSSIA, PRINCESS, Barranca, Costa Rica: 8 mammals, 6 reptiles, 10 insects and their allies—Costa Rica (gift)

SIOLI, DR. HARALD, Belem, Brazil: 217 lower invertebrates—Brazil (gift)

SMITH, PROFESSOR CLARENCE R., Aurora, Illinois: 1 reptile—Illinois (gift)

SPENCER, MRS. HOWARD C., Vernon, New Jersey: 4 reptiles—New Jersey (gift)

STEINER, JOHN, Chicago: 3 insects—Chicago (gift)

STEYERMARK, DR. JULIAN A., Barrington, Illinois: 1 mammal, 2 amphibians—Missouri (gift)

STICKEL, DR. WILLIAM H., Laurel, Maryland: 216 amphibians (including 1 type and 2 paratypes)—Philippine Islands (gift)

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TARRANT, ROSS, Walworth, Wisconsin: 2 reptiles, 8 fishes, 1 pair of shark jaws—Florida and Wisconsin (gift)

TASHIAN, RICHARD E., Lafayette, Indiana: 83 birds—Mexico (gift)

THOMPSON, ROBERT T., Cavecreek, Arizona: 2 insects—Arizona (gift)

THUROW, GORDON, Chicago: 15 reptiles and amphibians—Indiana and Bermuda (gift)

TOSCHI, DR. AUGUSTO, Bologna, Italy: 9 mammals—Italy (exchange)

TRAUB, MAJOR ROBERT, Washington, D.C.: 28 mammals, 69 insects (including 10 paratypes, 15 holotypes, and 15 allotypes)—various localities (gift)

TRAYLOR, NANCY, Winnetka, Illinois: 1 bird—Illinois (gift)

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 55 insects—various localities (exchange)

UNITED STATES NAVY MEDICAL RESEARCH UNIT No. 3, Anglo-Egyptian Sudan: 362 mammals, 25 fishes—Anglo-Egyptian Sudan (gift)

VAN DER SCHALIE, DR. HENRY, Ann Arbor, Michigan: 40 lots of lower invertebrates—United States (gift)

VAZ, DR. EDUARDO, Sao Paulo, Brazil: 13 snake skulls, 7 snake skins—South America (gift)

WARD, RONALD, Chicago: 103 insects—United States (gift)

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WIRDHAM, BERT, Eagleton, Arkansas: 1 reptile—Arkansas (gift)

WOODCOCK, H. E., Chicago: 4 insects—Nova Scotia and New Brunswick (gift)

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 Hart, William M.
 Hartmann, A. O.
 Hartshorn, Kenneth L.
 Hartwig, Otto J.
 Hartz, W. Homer
 Harvey, Byron, III
 Harvey, Richard M.
 Harwood, Thomas W.
 Haskell, Mrs. George E.
 Hass, G. C.
 Hay, Mrs. William Sherman
 Hayakawa, Dr. S. I.
 Hayes, Charles M.
 Hayes, Harold C.
 Hayes, Miss Mary E.
 Haynie, Miss Rachel W.
 Hays, Mrs. Arthur A.
 Hayslett, Arthur J.
 Hazlett, Dr. William H.
 Hazlett, Mrs. William H.
 Healy, Vincent Jerrems
 Heaney, Dr. N. Sproat
 Hearst, Mrs. Jack W.
 Heaton, Harry E.
 Heaton, Herman C.
 Heck, John
 Hedberg, Henry E.
 Heffernan, Miss Lili
 Hefner, Adam
 Heide, Mrs. Bernard H.
 Heiman, Marcus
 Heinzelman, Karl
 Heinzen, Mrs. Carl
 Heisler, Francis
 Hejna, Joseph F.
 Heldmaier, Miss Marie
 Helfrich, J. Howard
 Heller, Albert
 Heller, John A.
 Heller, Mrs. Walter E.
 Hellman, George A.
 Hellyer, Walter
 Hemple, Miss Anne C.
 Henkel, Frederick W.
 Henley, Dr. Eugene H.
 Hennings, Mrs. Abraham J.
 Henry, Huntington B.
 Henschel, Edmund C.
 Herrick, Charles E.
 Herron, James C.
 Herron, Mrs. Oliver L.
 Hershey, J. Clarence
 Hertz, Mrs. Fred
 Hertzberg, Lawrence
 Herwig, George
 Herwig, William D., Jr.
 Herz, Mrs. Alfred
 Hesse, E. E.
 Heverly, Earl L.
 Hibbard, Mrs. Angus S.
 Hibbard, Mrs. W. G.
 Hieber, Master J. Patrick
 Higley, Mrs. Charles W.
 Hildebrand, Dr. Eugene, Jr.
 Hildebrand, Grant M.
 Hill, Mrs. Russell D.
 Hill, William C.
 Hill, William E.
 Hille, Dr. Hermann
 Hillebrecht, Herbert E.
 Hills, Edward R.
 Hind, Mrs. John Dwight
 Hinman, Mrs. Estelle S.
 Hinrichs, Henry, Jr.
 Hirsch, Jacob H.
 Histed, J. Roland
 Hixon, Mrs. Frank P.
 Hodgkinson, Mrs. W. R.
 Hodgson, Mrs. G. C.
 Hoefman, Harold L.
 Hoffmann, Edward
 Hempstead
 Hogan, Robert E.
 Hokin, Mrs. Barney E.
 Holabird, W. S., Jr.
 Holden, Edward A.

ASSOCIATE MEMBERS (Continued)

- Hollander, Mrs. Samuel
Holleb, A. Paul
Hollenbach, Louis
Holliday, W. J.
Hollis, Henry L.
Holmburger, Max
Holmes, George J.
Holmes, Miss Harriet F.
Holmes, J. A.
Holmes, Mrs. Maud G.
Holmes, William
Holmes, William N.
Holt, Miss Ellen
Holt, McPherson
Holub, Anthony S.
Holzheimer, Carl
Homan, Miss Blossom L.
Honsik, Mrs. James M.
Hoover, Mrs. Fred W.
Hoover, H. Earl
Hoover, Ray P.
Hope, Alfred S.
Hopkins, Albert L.
Hopkins, Mrs. James M.
Hopkins, Mrs.
 James M., Jr.
Horcher, William W.
Horne, Mrs. William
 Dodge, Jr.
Horner, Mrs.
 Maurice L., Jr.
Hornung, Joseph J.
Horton, Mrs. Helen
Horton, Hiram T.
Horton, Horace B.
Horween, Arnold
Horween, Isidore
Hosbein, Louis H.
Hottinger, Adolph
Hovland, Mrs. John P.
Howard, Willis G.
Howe, Charles Albee
Howe, Clinton W.
Howe, Mrs. Pierce
 Layman
Howe, Ralph B.
Howe, Roger F.
Howe, Warren D.
Howell, Albert S.
Howes, Mrs. Frank W.
Howie, Mrs. James E.
Howse, Richard G.
Hoyne, Miss Susan D.
Hoyt, Mrs. Phelps B.
Hraback, L. W.
Hrdlicka, Mrs. John D.
Hubbard, George W.
Huber, Dr. Harry Lee
Hudson, Miss
 Katherine J.
Hudson, Walter L.
Huey, Mrs. A. S.
- Hufty, Mrs. F. P.
Huggins, Dr. Ben H.
Hughes, John E.
Hughes, John W.
Hume, James P.
Humphrey, H. K.
Huncke, Herbert S.
Huncke, Oswald W.
Hunding, B. N.
Hurd, Ferris E.
Hurvitz, H. R.
Huska, Mrs. Joseph
Hust, George
Huszagh, Ralph D.
Hutchinson, Foye P.
Hutchinson, Samuel S.
Hyatt, R. C.
- Ickes, Raymond W.
Idelman, Bernard
Igo, Michael L.
Ilg, Robert A.
Illich, George M., Jr.
Ingalls, Allin K.
Inlander, N. Newton
Inlander, Samuel
Irons, Dr. Ernest E.
Isaacs, Charles W., Jr.
Isham, Henry P.
Ives, Clifford E.
- Jackson, Allan
Jackson, Archer L.
Jackson, Mrs. Arthur S.
Jackson, Miss Laura E.
Jackson, Mrs. W. A.
Jacobi, Miss Emily C.
Jacobs, Julius
Jacobs, Mrs. Walter H.
Jacobs, Whipple
Jacobson, Raphael
James, Walter C.
Jameson, Clarence W.
Jancosek, Thomas A.
Janson, Dr. C. Helge M.
Janusch, Fred W.
Jarchow, Mrs. C. E.
Jarchow, Charles C.
Jarrow, Harry W.
Jeffreys, Mrs. Mary M.
Jeffries, Dr. Daniel W.
Jenkins, David F. D.
Jenkinson, Mrs. Arthur
 Gilbert
Jennings, Ode D.
Jerger, Wilbur Joseph
Jetzinger, David
Jirgal, John
Jirka, Dr. Frank J.
Jirka, Dr. Robert H.
John, Dr. Findley D.
Johnson, Dr. Adelaide
- Johnson, Alvin O.
Johnson, Calmer L.
Johnson, Mrs. Harley
 Alden
Johnson, Joseph M.
Johnson, Nels E.
Johnson, Mrs. O. W.
Johnson, Olaf B.
Johnson, Philip C.
Johnston, Edward R.
Johnston, Miss Fannie S.
Johnston, Mrs. Hubert
 McBean
Johnston, Mrs. M. L.
Jonak, Frank J.
Jones, Albert G.
Jones, Mrs. C. A.
Jones, James B.
Jones, Dr. Margaret M.
Jones, Melvin
Jones, Miss Susan E.
Joseph, Mrs. Jacob G.
Joseph, Louis L.
Joy, Guy A.
Judson, Clay
Juergens, H. Paul
Julien, Victor R.
- Kahn, Mrs. Arthur S.
Kahn, J. Kesner
Kahn, Jerome J.
Kahn, Louis
Kaine, James B.
Kamins, Dr. Maclyn M.
Kane, Jerome M.
Kanter, Jerome J.
Kaplan, Morris I.
Kaplan, Nathan D.
Karpen, Michael
Kasch, Frederick M.
Katz, Mrs. Sidney L.
Katz, Solomon
Katzenstein, Mrs.
 George P.
Katzin, Frank
Kauffman, Mrs. R. K.
Kauffmann, Alfred
Kaufman, Justin
Kaufmann, Dr.
 Gustav L.
Kavanagh, Clarence H.
Kay, Mrs. Marie E.
Keefe, Mrs. George I.
Kehl, Robert Joseph
Kehoe, Mrs. High Boles
Keith, Stanley
Keith, Mrs. Stanley
Kelker, Rudolph F., Jr.
Kelly, Mrs. Haven Core
Kelly, Miss Katherine
 Marjorie
Kelly, William J.

ASSOCIATE MEMBERS (Continued)

- Kemper, Hathaway G.
 Kemper, Miss Hilda M.
 Kempner, Harry B.
 Kempner, Stan
 Kendall, Mrs. Virginia H.
 Kendrick, John F.
 Kennedy, Mrs. E. J.
 Kennedy, Lesley
 Kennelly, Martin H.
 Kenney, Clarence B.
 Kent, Dr. O. B.
 Keogh, Gordon E.
 Kern, Mrs. August
 Kern, H. A.
 Kern, Dr. Nicholas H.
 Kern, Trude
 Kerwin, Edward M.
 Kesner, Jacob L.
 Kestnbaum, Meyer
 Kettering, Mrs.
 Eugene W.
 Kew, Mrs. Stephen M.
 Kiessling, Mrs. Charles S.
 Kile, Miss Jessie J.
 Kimball, David W.
 Kimball, William W.
 Kimbark, John R.
 King, Clinton B.
 King, Joseph H.
 Kingman, Mrs. Arthur G.
 Kinsey, Robert S.
 Kirkland, Mrs.
 Weymouth
 Kitchell, Howell W.
 Kitzelman, Otto
 Klee, Mrs. Nathan
 Kleinpell, Dr. Henry H.
 Kleist, Mrs. Harry
 Kleppinger, William H.
 Kleutgen, Dr. Arthur C.
 Klinetop, Mrs. Charles W.
 Knickerbocker, Miss
 Paula
 Knopf, Andrew J.
 Knutson, George H.
 Koch, Mrs. Fred J.
 Koch, Raymond J.
 Koch, Robert J.
 Kochs, August
 Kochs, Mrs. Robert T.
 Koehnlein, Wilson O.
 Kohl, Mrs. Caroline L.
 Kohler, Eric L.
 Kohlsaatt, Edward C.
 Konsberg, Alvin V.
 Kopf, Miss Isabel
 Koppenaar, Dr.
 Elizabeth Thompson
 Kornblith, Mrs.
 Howard G.
 Kosobud, William F.
 Kotal, John A.
 Kotin, George N.
 Koucky, Dr. J. D.
 Kovac, Stefan
 Krafft, Mrs. Walter A.
 Kraft, C. H.
 Kraft, James L.
 Kraft, John H.
 Kraft, Norman
 Kralovec, Emil G.
 Kralovec, Mrs. Otto J.
 Kramer, Leroy
 Kraus, Peter J.
 Kraus, Samuel B.
 Kresl, Carl
 Kretschmer, Dr.
 Herman L.
 Kretschmer,
 Herman L., Jr.
 Kropff, C. G.
 Krost, Dr. Gerard N.
 Kuehn, A. L.
 Kuh, Mrs. Edwin J., Jr.
 Kuhn, Frederick T.
 Kuhn, Dr. Hedwig S.
 Kunka, Bernard J.
 Kunstadter, Albert
 Kunstadter, Sigmund W.
 Kurfess, John Fredric
 Kurtz, W. O.
 Kurtzon, Morris
 Lacey, Miss Edith M.
 Laflin, Louis E., Jr.
 Laflin, Louis E., III
 Lambert, C. A.
 Lampert, Wilson W.
 Lanahan, Mrs. M. J.
 Lane, F. Howard
 Lane, Ray E.
 Lang, Edward J.
 Langenbach, Mrs. Alice R.
 Langford, Mrs.
 Robert E.
 Langhorne, George
 Tayloe
 Langworthy, Benjamin
 Franklin
 Lanman, E. B.
 Lansinger, Mrs. John M.
 Larimer, Howard S.
 Larsen, Samuel A.
 Larson, Mrs. Sarah G.
 Lasker, Albert D.
 Lassers, Sanford B.
 Latshaw, Dr. Blair S.
 Lauren, Newton B.
 Lautmann, Herbert M.
 Lavers, A. W.
 Lavezzorio, Mrs. J. B.
 Lavidge, Arthur W.
 Law, Mrs. Robert O.
 Lawless, Dr. Theodore K.
 Lawson, David A.
 Lax, John Franklin
 Layden, Michael J.
 Lazar, Maurice
 Lazear, George C.
 Leahy, James F.
 Leahy, Thomas F.
 Leavell, James R.
 LeBaron, Miss Edna
 Lebold, Foreman N.
 Lebold, Samuel N.
 Lebolt, John Michael
 Lederer, Dr. Francis L.
 Lee, David Arthur
 Lee, Mrs. John H. S.
 Lefens, Miss Katherine J.
 Lefens, Walter C.
 Leichenko, Peter M.
 Leight, Mrs. Albert E.
 Leland, Miss Alice J.
 Leland, Mrs. Roscoe G.
 LeMoon, A. R.
 Lennon, George W.
 Lenz, J. Mayo
 Leonard, Arthur T.
 Lerch, William H.
 Leslie, Dr. Eleanor I.
 Leslie, John Woodworth
 LeTourneau, Mrs.
 Robert
 Leverone, Louis E.
 Levinson, Mrs. Salmon O.
 Levitan, Benjamin
 Levitzet, Nathan
 Levy, Alexander M.
 Levy, Arthur G.
 Lewis, Mrs. Ellis R.
 Lewy, Dr. Alfred
 L'Hommedieu, Arthur
 Liebman, A. J.
 Lillyblade, Clarence O.
 Lindahl, Mrs. Edward J.
 Linden, John A.
 Lindheimer, B. F.
 Lingle, Bowman C.
 Lipman, Robert R.
 Liss, Samuel
 Little, Mrs. E. H.
 Littler, Harry E., Jr.
 Livingston, Julian M.
 Livingston, Mrs.
 Milton L.
 Llewellyn, Paul
 Lloyd, Glen A.
 Lochman, Philip
 Loeb, Hamilton M.
 Loewenberg, Israel S.
 Loewenberg, M. L.
 Loewenherz, Emanuel
 Loewenstein, Richard M.
 Loewenthal, Richard J.
 Logan, L. B.

ASSOCIATE MEMBERS (Continued)

- Long, William E.
 Loomis, Reamer G.
 Lord, Arthur R.
 Lord, John S.
 Lord, Mrs. Russell
 Loucks, Charles O.
 Louer, Albert E. M.
 Louis, Mrs. John J.
 Love, Chase W.
 Lovgren, Carl
 Lucey, Patrick J.
 Ludolph, Wilbur M.
 Lueder, Arthur C.
 Lunding, Franklin J.
 Luria, Herbert A.
 Lusk, R. R.
 Lustgarten, Samuel
 Lyford, Harry B.
 Lynch, J. W.
 Lyon, Charles H.
- Maass, J. Edward
 Mabee, Mrs. Melbourne
 MacDonald, E. K.
 MacIntyre, Mrs. M. K.
 MacKenzie, William J.
 Mackey, Frank J.
 Mackinson, Dr. John C.
 MacLellan, K. F.
 MacMullen, Dr. Della M.
 MacMurray, Mrs.
 Donald
 Madlener, Mrs.
 Albert F., Jr.
 Madlener, Otto
 Maehler, Edgar E.
 Magan, Miss Jane A.
 Magerstadt, Madeline
 Magill, John R.
 Magnus, Albert, Jr.
 Magnuson, Mrs. Paul
 Maher, Mrs. D. W.
 Main, Walter D.
 Majors, Mrs. B. S.
 Maling, Albert
 Malone, William H.
 Manaster, Harry
 Mandel, Mrs. Aaron W.
 Mandel, Edwin F.
 Mandel, Miss Florence
 Mandel, Mrs. Robert
 Manegold, Mrs. Frank W.
 Manierre, Francis E.
 Manierre, Louis
 Manley, John A.
 Mark, Mrs. Cyrus
 Mark, Griffith
 Marquart, Arthur A.
 Marsh, A. Fletcher
 Marsh, John
 McWilliams, II
 Marsh, Mrs. John P.
- Marsh, Mrs. Marshall S.
 Marston, Mrs. Thomas B.
 Martin, Mrs. George B.
 Martin, George F.
 Martin, Samuel H.
 Martin, W. B.
 Martin, Wells
 Martin, Mrs. William P.
 Marx, Adolf
 Marx, Frederick Z.
 Marzluff, Frank W.
 Marzola, Leo A.
 Mason, Willard J.
 Massee, B. A.
 Massey, Peter J.
 Masterson, Peter
 Mathesius, Mrs. Walther
 Matson, J. Edward
 Matter, Mrs. John
 Maurer, Dr. Siegfried
 Maxant, Basil
 Maxwell, Lloyd R.
 Mayer, Frank D.
 Mayer, Mrs. Herbert G.
 Mayer, Herman J., Jr.
 Mayer, Isaac H.
 Mayer, Leo
 Mayer, Oscar F.
 Mayer, Oscar G.
 Mayer, Theodore S.
 Mazurek, Miss Olive
 McAloon, Owen J.
 McArthur, Billings M.
 McBirney, Mrs. Hugh J.
 McCahey, James B.
 McCarthy, Edmond J.
 McCarthy, Joseph W.
 McCausland, Mrs.
 Clara L.
 McClun, John M.
 McCord, Downer
 McCormack, Prof. Harry
 McCormick, Mrs.
 Chauncey
 McCormick, Fowler
 McCormick, Howard H.
 McCormick, Leander J.
 McCormick,
 Robert H., Jr.
 McCrea, Mrs. W. S.
 McCready, Mrs. E. W.
 McCreight, Louis Ralph
 McDonald, E. F., Jr.
 McDonald, Lewis
 McDougal, Mrs. James B.
 McDougal, Mrs. Robert
 McErlean, Charles V.
 McGraw, Max
 McGuinn, Edward B.
 McGurn, Matthew S.
 McIntosh, Arthur T.
- McIntosh, Mrs.
 Walter G.
 McKenna, Dr. Charles H.
 McKinney, Mrs. Hayes
 McMenemy, Logan T.
 McMillan, James G.
 McMillan, John
 McMillan, W. B.
 McNamara, Louis G.
 McNamee, Peter F.
 McNulty, Joseph D.
 McQuarrie, Mrs. Fannie
 McVoy, John M.
 Mead, Dr. Henry C. A.
 Medsker, Dr. Ora L.
 Melcher, George Clinch
 Melnick, Leopold B.
 Merrell, John H.
 Merriam, Miss Eleanor
 Merrill, William W.
 Metz, Dr. A. R.
 Meyer, Mrs. A. H.
 Meyer, Abraham W.
 Meyer, Dr. Charles A.
 Meyer, Charles Z.
 Meyerhoff, A. E.
 Meyers, Erwin A.
 Meyers, Jonas
 Michaels, Everett B.
 Michel, Dr. William J.
 Midowicz, C. E.
 Mielenz, Robert K.
 Milburn, Miss Anne L.
 Milhening, Frank
 Miller, Miss Bertie E.
 Miller, Mrs. Clayton W.
 Miller, Mrs. Donald J.
 Miller, Mrs. F. H.
 Miller, Hyman
 Miller, John S.
 Miller, Mrs. Olive
 Beaupre
 Miller, Oscar C.
 Miller, Mrs. Phillip
 Miller, R. T.
 Mills, Allen G.
 Mills, Lloyd Langdon
 Miner, Dr. Carl S.
 Minturn, Benjamin E.
 Mitchell, George F.
 Mitchell, John J.
 Mitchell, Leeds
 Mitchell, Oliver
 Mix, Dr. B. J.
 Mock, Dr. Harry Edgar
 Moderwell, Charles M.
 Moeling, Mrs. Walter G.
 Moeller, George
 Moeller, Rev. Herman H.
 Moist, Mrs. Samuel E.
 Mojonnier, Timothy
 Mollan, Mrs. Ferne T.

ASSOCIATE MEMBERS (Continued)

- Molloy, David J.
 Mong, Mrs. C. R.
 Monheimer, Henry I.
 Monroe, William S.
 Moore, Paul,
 Moore, Philip Wyatt
 Moran, Miss Margaret
 Morey, Dr. Charles W.
 Morf, F. William
 Morrison, Mrs. C. R.
 Morrison, Mrs. Harry
 Morrison, James C.
 Morrow, Mrs. John, Jr.
 Morse, Mrs. Charles J.
 Morse, Leland R.
 Morse, Mrs. Milton
 Morse, Robert H.
 Morton, Sterling
 Morton, William Morris
 Moses, Howard A.
 Moss, Jerome A.
 Mouat, Andrew J.
 Moxon, Dr. George W.
 Moyer, E. J. T.
 Moyer, Mrs. Paul S.
 Mudge, Mrs. John B.
 Muehlstein, Mrs. Charles
 Mueller, Austin M.
 Mueller, Miss Hedwig H.
 Mueller, J. Herbert
 Mueller, Paul H.
 Mulford, Miss Melinda
 Jane
 Mulhern, Edward F.
 Mulholand, William H.
 Munroe, Moray
 Murphy, Mrs. Helen C.
 Murphy, Joseph D.
 Murphy, O. R.
 Murphy, Robert E.
 Muszynski, John J.
 Myrland, Arthur L.

 Naber, Henry G.
 Nadler, Dr. Walter H.
 Naess, Sigurd E.
 Nagel, Mrs. Frank E.
 Nance, Willis D.
 Naumann, Miss Susan
 Nebel, Herman C.
 Neely, Mrs. Lloyd F.
 Nehls, Arthur L.
 Nellegar, Mrs. Jay C.
 Nelson, Arthur W.
 Nelson, Charles G.
 Nelson, Donald M.
 Nelson, Victor W.
 Neuman, Sidney
 Neumann, Arthur E.
 Newhall, R. Frank
 Newhouse, Karl H.
 Newman, Mrs. Albert A.

 Newman, Charles H.
 Nichols, Mrs.
 George R., Jr.
 Nichols, J. C.
 Nichols, S. F.
 Nilsson, Mrs.
 Goodwin M.
 Nishkian, Mrs.
 Vaughn G.
 Nitze, Mrs. William A.
 Noble, Samuel R.
 Nollau, Miss Emma
 Noonan, Edward J.
 Norman, Harold W.
 Norris, Mrs. Lester
 Norton, Christopher D.
 Norton, R. H.
 Novak, Charles J.
 Noyes, A. H.
 Noyes, Allan S.
 Noyes, Mrs. May Wells
 Nufer, Gene
 Nusbaum, Mrs.
 Hermien D.
 Nyman, Dr. John Egbert

 Oates, James F.
 Oberfelder, Herbert M.
 Oberfelder, Walter S.
 Obermaier, John A.
 O'Brien, Miss Janet
 O'Connell, Edmund
 Daniel
 Odell, William R., Jr.
 Offield, James R.
 Oglesbee, Nathan H.
 O'Keefe, Mrs. Dennis D.
 O'Keefe, William F.
 Olcott, Mrs. Henry C.
 Oldberg, Dr. Eric
 Oldefest, Edward G.
 Oleson, Wrisley B.
 Oliver, Mrs. Paul
 Olsen, Miss Agnes J.
 Olsen, Mrs. Arthur O.
 Olson, Gustaf
 Olson, Rudolph J.
 O'Neil, Dr. Owen
 Onofrio, Mrs. Michael J.
 Ooms, Casper William
 Opeka, Frank M.
 Oppenheimer, Alfred
 Oppenheimer, Mrs.
 Harry D.
 Orndoff, Dr. Benjamin H.
 O'Rourke, Albert
 Orr, Mrs. Robert C.
 Orr, Thomas C.
 Orthal, A. J.
 Ortmyer, Dr. Marie
 Osborn, Theodore L.
 Ostrom, Mrs. J. Augustus

 Otis, J. Sanford
 Otis, Joseph E.
 Otis, Joseph Edward, Jr.
 Otis, Stuart Huntington
 Owings, Mrs.
 Nathaniel A.

 Paasche, Jens A.
 Packard, Dr. Rollo K.
 Paepcke, Walter P.
 Page, John W.
 Palmer, James L.
 Palmgren, Mrs.
 Charles A.
 Pardee, Harvey S.
 Pardridge, Mrs. E. W.
 Park, R. E.
 Parker, Dr. Gaston C.
 Parker, Norman S.
 Parker, Troy L.
 Parks, C. R.
 Parmelee, Dr. A. H.
 Parry, Mrs. Norman G.
 Partridge, Lloyd C.
 Paschen, Mrs. Henry
 Pashkow, A. D.
 Patterson, Grier D.
 Patterson, Mrs. L. B.
 Patterson, Mrs. Wallace
 Patzelt, Miss Janet
 Peabody, Howard B.
 Peabody, Miss Susan W.
 Pearl, Allen S.
 Pearce, Langdon
 Pearson, F. W.
 Pearson, George
 Albert, Jr.
 Peck, Dr. David B.
 Peet, Mrs. Belle G.
 Peirce, Albert E.
 PenDell, Charles W.
 Percy, Dr. Mortimer
 Nelson
 Perel, Harry Z.
 Perkins, A. T.
 Perkins, Mrs. Herbert F.
 Perry, Mrs. I. Newton
 Peter, William F.
 Peters, Harry A.
 Petersen, Elmer M.
 Petersen, Jurgen
 Peterson, Arthur J.
 Peterson, Axel A.
 Peterson, Mrs. Bertha I.
 Peterson, Mrs.
 Richard E.
 Paelzer, Miss
 Elizabeth W.
 Pflaum, A. J.
 Pflock, Dr. John J.
 Phelps, Mrs. W. L.
 Phemister, Dr. Dallas B.

ASSOCIATE MEMBERS (Continued)

- Phillips, Dr. Herbert
 Morrow
 Phillips, Mervyn C.
 Pick, Albert, Jr.
 Pick, Frederic G.
 Pierce, J. Norman
 Pierce, Paul, Jr.
 Pierson, Mrs. James
 Rhodes
 Pierson, Joseph B.
 Pink, Mrs. Ira M.
 Pirie, Mrs. John T.
 Pitzner, Alwin Frederick
 Plapp, Miss Doris A.
 Platt, Edward Vilas
 Platt, Mrs. Robert S.
 Plummer, Comer
 Plunkett, William H.
 Pobloske, Albert C.
 Podell, Mrs. Beatrice
 Hayes
 Polk, Mrs. Stella F.
 Pollak, Charles A.
 Poole, Mrs. Marie R.
 Poor, Fred A.
 Pope, Herbert
 Poppenhagen, Henry J.
 Porter, Charles H.
 Porter, Edward C.
 Porter, Mrs. Frank S.
 Porter, Henry H.
 Porter, Louis
 Porter, Mrs. Sidney S.
 Portis, Dr. Sidney A.
 Post, Mrs. Philip Sidney
 Pottenger, William A.
 Poulson, Mrs. Clara L.
 Powills, Michael A.
 Pratt, Mrs. William E.
 Prentice, John K.
 Price, John McC.
 Primley, Walter S.
 Prince, Harry
 Prince, Rev. Herbert W
 Prince, Leonard M.
 Pritchard, Richard E.
 Probst, Marvin G.
 Proxmire, Dr.
 Theodore Stanley
 Prussing, Mrs. R. E.
 Pucci, Lawrence
 Puckey, F. W.
 Pulver, Hugo
 Purcell, Joseph D.
 Purcey, Victor W.
 Putnam, Miss Mabel C.
 Puttkammer, E. W.
 Pyterek, Rev. Peter H.

 Quick, Miss Hattiemae

 Raber, Franklin

 Racheff, Ivan
 Radford, Mrs. W. A., Jr.
 Radniecki, Rev. Stanley
 Raff, Mrs. Arthur
 Raftree, Miss Julia M.
 Railton, Miss Frances
 Ramis, Leon Lipman
 Randall, Rev. Edwin J.
 Randall, Irving
 Raney, Mrs. R. J.
 Rankin, Miss Jessie H.
 Rassweiler, August
 Rathje, Frank C.
 Ravenscroft, Edward H.
 Raymond, Mrs.
 Howard D.
 Razim, A. J.
 Reach, Benjamin F.
 Redfield, William M.
 Redington, F. B.
 Redmond, Forrest H.
 Reed, Mrs. Frank D.
 Reed, Mrs. Lila H.
 Reed, Norris H.
 Reed, Mrs. Philip L.
 Reeve, Mrs. Earl
 Regan, Mrs. Robert G.
 Rengenstein, Joseph
 Regensteiner, Theodore
 Regnery, Frederick L.
 Regnery, William H.
 Reid, Mrs. Bryan
 Reilly, Vincent P.
 Reingold, J. J.
 Remy, Mrs. William
 Renaldi, George J.
 Renshaw, Mrs. Charles
 ReQua, Mrs. Charles
 Howard, Jr.
 ReQua, Haven A.
 Rew, Mrs. Irwin
 Reynolds, Mrs.
 G. William
 Reynolds, Harold F.
 Rice, Mrs. Charles R.
 Rice, Laurence A.
 Rich, Elmer
 Rich, Harry
 Richards, Mrs. Bartlett
 Richards, Donald
 Richards, Marcus D.
 Richardson, George A.
 Richardson, Guy A.
 Richter, Mrs. Adelyn W.
 Rickcords, Francis S.
 Ridgeway, Ernest
 Rieser, Leonard M.
 Rietz, Elmer W.
 Rietz, Walter H.
 Ripstra, J. Henri
 Ritchie, Mrs. John
 Rittenhouse, Charles J.

 Roberts, Mrs. John
 Roberts, John M.
 Roberts, Shepherd M.
 Roberts, William
 Munsell
 Robertson, Hugh
 Robinson, Sanger P.
 Robinson,
 Theodore W., Jr.
 Robson, Miss Sarah C.
 Roderick, Solomon P.
 Rodgers, Dr. David C.
 Rodman, Thomas
 Clifford
 Rodman, Mrs. Hugh
 Roehling, Mrs. Otto G.
 Roehm, George R.
 Roesch, Frank P.
 Rogers, Miss Annie T.
 Rogers, Mrs. Bernard F.
 Rogers, Joseph E.
 Rogerson, Everett E.
 Roggenkamp, John
 Rogovsky, W. P.
 Roller, Fred S.
 Rolnick, Dr. Harry C.
 Romer, Miss Dagmar E.
 Root, John W.
 Rosborough, Dr. Paul A.
 Rosen, M. R.
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 Chapman, James
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 Chapman, Richard R.
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Gregg, John P.	Hardy, Mrs. L. Martin	Helgason, Arni
Greig, Dr. H. Wallace	Hargrave, Homer P.	Heller, H. G.
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Watkins, Frank A.	Wickersham, Mrs.	Wright, William Ryer
Watling, John	Lucille	Wrisley, George A.
Watson, David R.	Wickland, Algot A.	
Watson, Norman E.	Wickman, C. E.	Yates, John E.
Watt, Herbert J.	Wilbur, Lawrence S.	Yohe, C. Lloyd
Way, Mrs. Henry J.	Wilby, A. C.	Yonkers, Edward H., Jr.
Weary, Allen M.	Wilds, John L.	Youker, Mrs. Claude W.
Webb, Dr. Edward F.	Wiley, Mrs. Edwin G.	Youmans, Mrs. M. A.
Webber, Harold H.	Wilhite, James A.	Young, C. S.
Weber, James E.	Wilk, Arthur E.	Young, Dr. Donald R.
Webster, Dr. Augusta	Wilk, Dr. Clifford M.	Young, J. H.
Webster, Frederick F.	Wilkinson, William D.	Young, J. L.
Webster, N. C.	Willard, Nelson W.	Youngberg, Arthur C.
Wehmeier, H. A.	Williams, Albert W.	Youngren, W. W.
Weidert, William C.	Williams, Mrs.	
Weigle, Mrs. Maurice	Allan C., Jr.	Zaczek, Miss
Weiler, C. J.	Williams, Jay C.	Genevieve A.
Weiner, Charles	Williams, Lawrence	Zadek, Milton
Weinress, S. J.	Williams, Ralph E.	Zangerle, A. Arthur
Weinzimmer, Dr. H. R.	Williams, Russell V.	Zaus, Mrs. Earl A.
Weisbrod, Maxfield	Williamson, Henry T.	Zehr, Ores E.
Weismantel, Miss	Williamson, John T.	Zimmer, Harry L.
Theresa A.	Willis, Ivan L.	Zimmerman, Austin M.
Weiss, Alexander	Willott, Mrs. Adele	Zimmerman, Carl
Weitman, W. E.	Willy, Gustave J.	Zimmerman, E. W.
Weitzel, Carl J.	Wilmarth, Donald G.	Zimmerman, Dr.
Welch, M. W.	Wilson, Allen B.	Harold W.
Welfeld, Marvin J.	Wilson, Arlen J.	Zimmerman, Preston
Wellin, Harold	Wilson, H. Fred	Zimmermann, Mrs. P. T.
Wells, C. A.	Wilson, Percival C.	Zipse, Edwin W.
Wells, F. Harris	Wilson, Dr. William	Zitzewitz, Arthur F.
Wells, Frank C.	Windchy, Mrs.	Zolla, Abner M.
Wells, Henry L.	Frederick O.	Zurcher, Mrs. Victor K.

DECEASED, 1950

Barrett, Oliver R.

Bas, Marvin J.

Byfield, Ernest L.

ANNUAL MEMBERS *(Continued)*

Connolly, R. E.	Jarvis, William B.	Petersen, M. H.
Dempsey, John S.	Jolly, John W.	Poyer, Stephen A.
Dillbahner, Frank J.	Joseph, Albert G.	Randall, Frank A.
Field, Mrs. Wentworth G.	Kinnett, D. H.	ReQua, Mrs. Charles H.
Ganey, Miss Helen M.	Larson, Elis L.	Robinson, Miss Nellie
Hardy, Edward K.	Lichty, E. P.	Schenker, Ben W.
Hills, Charles W.	Lochridge, W. F.	Schwartz, Joseph
	McNally, Frederick L.	Smith, H. S.
	Mills, Ben	Stahl, Felix B.
		Witkowsky, James

Articles of Incorporation

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer

Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

[SEAL] G. R. MITCHELL,
NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 15th day of November, 1943, the name of FIELD MUSEUM OF NATURAL HISTORY was changed to CHICAGO NATURAL HISTORY MUSEUM. A certificate to this effect was filed November 23, 1943, in the office of the Secretary of State for Illinois.

Amended By-Laws

DECEMBER, 1945

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board,

become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the Member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures and entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change

of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants, signed by such officer, or officers, or other persons as the Board of Trustees may from time to time designate.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of the Chicago Natural History Museum, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of the Chicago Natural History Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology—each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of not less than five or more than seven members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to make and alter investments from time to time, reporting its actions to the Board of Trustees. The Finance Committee is fully authorized to cause any funds or investments of the Corporation to be made payable to bearer, and it is further authorized to cause real estate of the Corporation, its funds and investments, to be held or registered in the name of a nominee selected by it.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

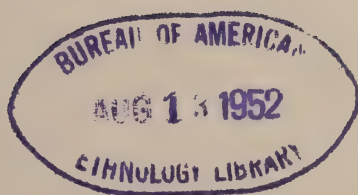
SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. The By-Laws, and likewise the Articles of Incorporation, may be amended at any regular meeting of the Board of Trustees by a vote in favor thereof of not less than two-thirds of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.

1200, 100

ANNUAL REPORT

1951



Chicago Natural History Museum





JOHN P. WILSON

Member of the Board of Trustees since 1932
Member of the Executive Committee and Finance Committee

CHICAGO NATURAL HISTORY MUSEUM

Report of the Director

to the

Board of Trustees

for the year 1951



CHICAGO, ILLINOIS

JANUARY 1952

PRINTED IN THE UNITED STATES OF AMERICA
BY CHICAGO NATURAL HISTORY MUSEUM PRESS

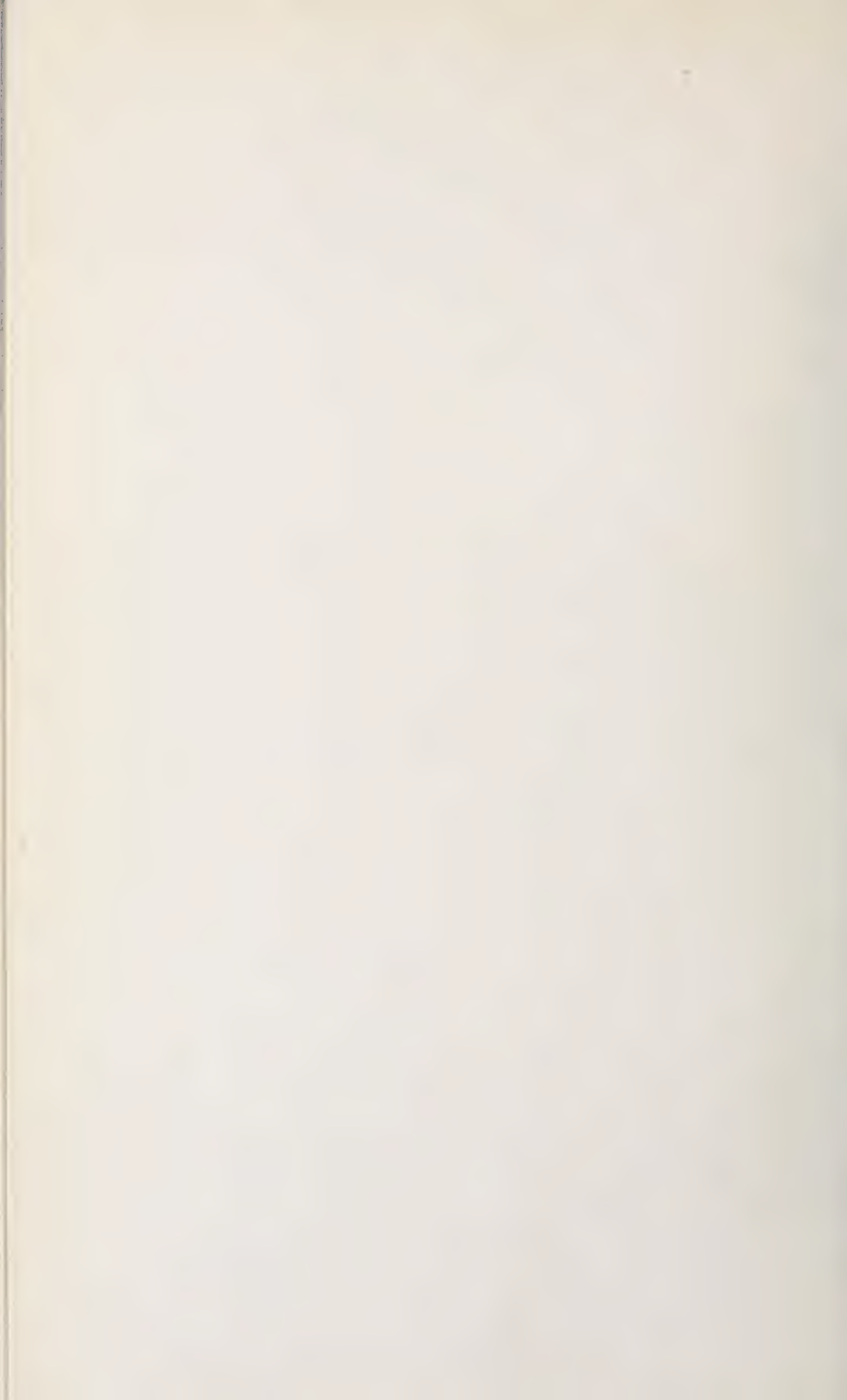
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Former Officers

PRESIDENTS	EDWARD E. AYER* 1894-1898
	HARLOW N. HIGINBOTHAM* 1898-1908
FIRST VICE-PRESIDENTS	MARTIN A. RYERSON* 1894-1932
	ALBERT A. SPRAGUE* 1933-1946
SECOND VICE-PRESIDENTS	NORMAN B. REAM* 1894-1902
	MARSHALL FIELD, JR.* 1902-1905
	STANLEY FIELD 1906-1908
	WATSON F. BLAIR* 1909-1928
	ALBERT A. SPRAGUE* 1929-1932
	JAMES SIMPSON* 1933-1939
	SILAS H. STRAWN* 1940-1946
	ALBERT B. DICK, JR. 1946-1951
THIRD VICE-PRESIDENTS	ALBERT A. SPRAGUE* 1921-1928
	JAMES SIMPSON* 1929-1932
	ALBERT W. HARRIS 1933-1941
SECRETARIES	RALPH METCALF 1894
	GEORGE MANIERRE* 1894-1907
	FREDERICK J. V. SKIFF* 1907-1921
	D. C. DAVIES* 1921-1928
	STEPHEN C. SIMMS* 1928-1937
TREASURERS	BYRON L. SMITH* 1894-1914
DIRECTORS	FREDERICK J. V. SKIFF* 1893-1921
	D. C. DAVIES* 1921-1928
	STEPHEN C. SIMMS* 1928-1937

* Deceased

Former Members *of the*

Board of Trustees

GEORGE E. ADAMS,* 1893-1917	MARSHALL FIELD, JR.,* 1899-1905
OWEN F. ALDIS,* 1893-1898	FREDERICK J. V. SKIFF,* 1902-1921
ALLISON V. ARMOUR,* 1893-1894	GEORGE F. PORTER,* 1907-1916
EDWARD E. AYER,* 1893-1927	RICHARD T. CRANE, JR.,* 1908-1912, 1921-1931
JOHN C. BLACK,* 1893-1894	JOHN BARTON PAYNE,* 1910-1911
M. C. BULLOCK,* 1893-1894	ALBERT A. SPRAGUE,* 1910-1946
DANIEL H. BURNHAM,* 1893-1894	CHAUNCEY KEEP,* 1915-1929
GEORGE R. DAVIS,* 1893-1899	HENRY FIELD,* 1916-1917
JAMES W. ELLSWORTH,* 1893-1894	WILLIAM WRIGLEY, JR.,* 1919-1931
CHARLES B. FARWELL,* 1893-1894	JOHN BORDEN, 1920-1938
FRANK W. GUNSAULUS,* 1893-1894, 1918-1921	ALBERT W. HARRIS, 1920-1941
EMIL G. HIRSCH,* 1893-1894	JAMES SIMPSON,* 1920-1939
CHARLES L. HUTCHINSON,* 1893-1894	HARRY E. BYRAM,* 1921-1928
JOHN A. ROCHE,* 1893-1894	ERNEST R. GRAHAM,* 1921-1936
MARTIN A. RYERSON,* 1893-1932	D. C. DAVIES,* 1922-1928
EDWIN WALKER,* 1893-1910	CHARLES H. MARKHAM,* 1924-1930
WATSON F. BLAIR,* 1894-1928	SILAS H. STRAWN,* 1924-1946
WILLIAM J. CHALMERS,* 1894-1938	FREDERICK H. RAWSON,* 1927-1935
HARLOW N. HIGINBOTHAM,* 1894-1919	STEPHEN C. SIMMS,* 1928-1937
HUNTINGTON W. JACKSON,* 1894-1900	WILLIAM V. KELLEY,* 1929-1932
ARTHUR B. JONES,* 1894-1927	FRED W. SARGENT,* 1929-1939
GEORGE MANIERRE,* 1894-1924	LESLIE WHEELER,* 1934-1937
CYRUS H. McCORMICK,* 1894-1936	CHARLES A. McCULLOCH,* 1936-1945
NORMAN B. REAM,* 1894-1910	THEODORE ROOSEVELT,* 1938-1944
NORMAN WILLIAMS,* 1894-1899	BOARDMAN CONOVER,* 1940-1950
	HOWARD W. FENTON, 1941-1951

*Deceased

Officers, Trustees, and Committees, 1951

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Pension—Samuel Insull, Jr., Sewell L. Avery, Hughston M. McBain

* Resigned, 1951

† Retired, 1951

List of Staff, 1951

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FAY-COOPER COLE, *Research Associate, Malaysian
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Archaeology*

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Archaeology*

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ELAINE BLUMH, *Assistant, Archaeology*

GEORGE I. QUIMBY, *Curator of Exhibits*

ROBERT J. BRAIDWOOD, *Research Associate, Old World
Prehistory*

MIGUEL COVARRUBIAS, *Research Associate, Primitive Art*

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GUSTAF DALSTROM, *Artist*

JOHN PLETINCKX, *Ceramic Restorer*

WALTER C. REESE, *Preparator*

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PAUL C. STANDLEY, *Curator Emeritus, Herbarium*

JULIAN A. STEYERMARK, *Curator, Herbarium*

GEORGE A. DAVIS,* *Assistant, Herbarium*

J. FRANCIS MACBRIDE, *Curator, Peruvian Botany*

EARL E. SHERFF, *Research Associate, Systematic Botany*

FRANCIS DROUET, *Curator, Cryptogamic Botany*

HANFORD TIFFANY, *Research Associate, Cryptogamic
Botany*

DONALD RICHARDS, *Research Associate, Cryptogamic
Botany*

SIDNEY F. GLASSMAN,* *Assistant, Cryptogamic Herbarium*

E. P. KILLIP, *Research Associate, Phanerogamic Botany*

HUGH C. CUTLER, *Curator, Economic Botany*

* Resigned, 1951

DEPARTMENT
OF
BOTANY
(Continued)

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EVERETT C. OLSON, *Research Associate, Fossil Vertebrates*
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VIOLET S. WHITFIELD, *Associate, Fossil Plants*
ERNST ANTEVS, *Research Associate, Glacial Geology*
ROBERT K. WYANT, *Curator, Economic Geology*
HARRY E. CHANGNON, *Curator of Exhibits*
ORVILLE L. GILPIN, *Chief Preparator, Fossils*
HENRY HORBACK, *Preparator*
WILLIAM D. TURNBULL, *Preparator*
STANLEY KUCZEK, *Preparator*
HENRY U. TAYLOR, *Preparator*
JOHN CONRAD HANSEN, *Artist*
JOANNE NEHER, *Departmental Secretary*

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RUDYERD BOULTON, *Research Associate, Birds*
MELVIN A. TRAYLOR, JR., *Research Associate, Birds*
ELLEN T. SMITH, *Associate, Birds*
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CH'ENG-CHAO LIU, *Research Associate, Reptiles*
HYMEN MARX, *Assistant, Reptiles*
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ROBERT F. INGER, *Assistant Curator, Fishes*

* Resigned, 1951

**DEPARTMENT
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(Continued)**

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 RUPERT L. WENZEL, *Curator, Insects*
 HENRY S. DYBAS, *Associate Curator, Insects*
 ALFRED E. EMERSON, *Research Associate, Insects*
 GREGORIO BONDAR, *Research Associate, Insects*
 CHARLES H. SEEVERS, *Research Associate, Insects*
 ALEX K. WYATT, *Research Associate, Insects*
 AUGUST ZIEMER, *Assistant, Insects*
 RUTH MARSHALL, *Research Associate, Arachnids*
 FRITZ HAAS, *Curator, Lower Invertebrates*
 D. DWIGHT DAVIS, *Curator, Vertebrate Anatomy*
 DOROTHY B. FOSS, *Osteologist*
 R. M. STRONG, *Research Associate, Anatomy*
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 HARRY HOOGSTRAAL, *Field Associate*
 DIOSCORO S. RABOR, *Field Associate*
 LEON L. WALTERS, *Taxidermist*
 FRANK C. WONDER, *Taxidermist*
 RONALD J. LAMBERT, *Taxidermist*
 CARL W. COTTON, *Taxidermist*
 CELESTINO KALINOWSKI, *Assistant Taxidermist*
 DOMINICK VILLA, *Tanner*
 JOSEPH B. KRSTOLICH, *Artist*
 MARGARET G. BRADBURY, *Artist*
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 MARY P. MURRAY, * *Assistant*
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AND
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 MARIE SVOBODA
 HARRIET SMITH
 JANE SHARPE
 ANNE STROMQUIST

* Resigned, 1951

THE LAYMAN LECTURER	PAUL G. DALLWIG
THE LIBRARY	<p><i>Administration:</i> META P. HOWELL, <i>Librarian</i> LOUISE BOYNTON DENISON, <i>Administrative Assistant</i></p> <p><i>Classification and Cataloguing:</i> DAWN DAVEY, <i>Classifier</i> EUNICE MARTHENS GEMMILL, <i>Classifier</i> M. EILEEN ROCOURT, <i>Classifier</i></p> <p><i>Reference:</i> AUDREY GREELEY, <i>Reference Librarian</i> RUTH DEBUS,* <i>Reference Librarian</i> WINIFRED E. WEISSMAN,* <i>Assistant Reference Librarian</i></p> <p><i>Bindery and Stacks:</i> BORIS IVANOFF</p>
ACCOUNTING	WILLIAM A. BENDER, <i>Auditor</i> A. L. STEBBINS, <i>Assistant Auditor</i> ROBERT E. BRUCE, <i>Purchasing Agent</i>
BOOK SHOP	JESSIE DUDLEY, <i>in charge</i>
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PUBLIC RELATIONS COUNSEL	H. B. HARTE CHRISTINE TARDY, <i>Assistant</i>
DIVISION OF MEMBERSHIPS	PEARLE BILINSKE, <i>in charge</i>
DIVISIONS OF PHOTOGRAPHY AND ILLUSTRATION	JOHN BAYALIS, <i>Photographer</i> DOUGLAS E. TIBBITTS, <i>Illustrator</i>

* Resigned, 1951

† Retired, 1951

**DIVISION OF
MOTION PICTURES**

JOHN W. MOYER,‡ *in charge*

**DIVISION OF
PRINTING**

RAYMOND H. HALLSTEIN, *in charge*
HAROLD M. GRUTZMACHER, *Assistant*

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ENGINEERING

WILLIAM E. LAKE, *Chief Engineer*
LEONARD CARRION, *Assistant Chief Engineer*

THE GUARD

GEORGE WOODWARD, *Captain*

‡ On leave



SOUTH FACADE OF THE MUSEUM

Chicago Natural History Museum (formerly Field Museum of Natural History) faces Roosevelt Road at Lake Shore Drive. It is open every day except Christmas and New Year's Day and may be reached by elevated or surface railways, South Shore and Illinois Central suburban trains, or bus. There is ample free parking space.

Annual Report

of the Director

To the Trustees:

I have the honor to present a report of the operation of the Museum for the year ending December 31, 1951.

The year will be remembered for the many important accessions of notable scientific collections received by the various departments of the Museum. We were especially fortunate in obtaining from the Carnegie Museum its entire reference collection of exotic fishes, a collection that more than doubles the number of our type specimens and adds some forty thousand specimens. A gracious gift from Mrs. Sherman C. Bishop and her daughter, Mrs. Daniel W. O'Dell, brought to us the outstanding collection of salamanders accumulated by the late Dr. Bishop of the University of Rochester. This gift was made to this Museum in recognition of its pre-eminence in the field of herpetology. Subsequently the University of Rochester presented to us its own collection of amphibians and reptiles, which, to a large extent, had been collected by Dr. Bishop. Of more than usual importance was the accession of the famous Bernhauer Collection of staphylinid beetles. Arrangements were completed for the purchase of this collection in Vienna, Austria, from Dr. Ilse Himmel, daughter of the late Dr. Max Bernhauer, and at the close of the year Rupert L. Wenzel, Curator of Insects, was on his way to Europe to supervise the details of packing and shipping. This collection consists of perhaps one hundred thousand specimens that include types of from four to five thousand species. The Division

of Insects was fortunate also in obtaining the collection of mordellid beetles purchased from Eugene Ray, a specialist in this group, and the collection of about ten thousand rove beetles presented by Dr. Charles H. Seevers, Research Associate.

Outstanding acquisitions in the Department of Botany are represented by the extensive collections of North American and European cryptogams purchased from Dr. P. O. Schallert, of Altamonte Springs, Florida, and the large herbarium of European lichens, containing many types, purchased from Dr. Camillo Sbarbaro, of Genoa, Italy. Both of these collections were obtained for the Museum through the Elmer J. Richards Fund. After prolonged negotiation, the Department of Anthropology received more than one thousand specimens of Mexican antiquities through an exchange with the National Museum of Mexico. Not only is the collection itself of great archaeological value, but also it is especially pleasing to the Museum to note the cordial co-operation of the officials of the National Museum of Mexico. In return, this Museum sent archaeological and ethnological specimens from our collections from North America as well as from our outstanding collections from Oceania. A noteworthy acquisition that came to the Department of Geology was the paleobotanical collection received from the Walker Museum of the University of Chicago. Again the Museum is pleased to note the cordial co-operation of a friendly neighboring institution. This splendid addition will give world-wide coverage to the Museum's collection of fossil plants from the Paleozoic to Tertiary times. These accessions and others are more fully described under the headings of the scientific departments.

TRUSTEES AND OFFICERS

Stanley Field, president of Chicago Natural History Museum, was re-elected at the Annual Meeting of the Board of Trustees in January to serve for his forty-third consecutive year. All other officers were likewise re-elected. They are: Marshall Field, first vice-president; Albert B. Dick, Jr., second vice-president; Samuel Insull, Jr., third vice-president; Solomon A. Smith, treasurer; Clifford C. Gregg, secretary; and John R. Millar, assistant secretary. Mr. Dick later resigned as second vice-president although he continued as member of the Board of Trustees and member of the executive and finance committees; Henry P. Isham, Trustee, was added to the executive committee; and Howard W. Fenton retired from the Board of Trustees because of ill health.

MEMBERSHIP

The total number of Members on the Museum roster at the close of 1951 was 4,771. The Museum thanks its many friends who, as Members, have helped to support its scientific and educational activities. It is hoped that those who found it necessary to discontinue their memberships will soon again enroll as Members and resume their association with the work of the Museum. The number of Members in each membership classification on December 31, 1951, was as follows: *Benefactors*—24; *Honorary Members*—8; *Patrons*—16; *Corresponding Members*—6; *Contributors*—176; *Corporate Members*—40; *Life Members*—159; *Non-Resident Life Members*—17; *Associate Members*—2,247; *Non-Resident Associate Members*—12; *Sustaining Members*—24; *Annual Members*—2,042. The names of Members of the Museum during 1951 are listed at the end of this Report.

ATTENDANCE

The number of students visiting the Museum in the spring and fall months continued to increase in 1951 as the result of more use of community resources than ever before in school planning. School busses from all over Illinois and surrounding states brought children to us in great numbers. In May, 1951, for example, the Museum's total attendance was 107,078, and of this number 34,047 (approximately 32 per cent) were in organized school groups on school days. The largest student-group of the year was 1,500 delegates to the National Congress of 4-H Clubs on their annual visit to the Museum. These students, who came from every state, Hawaii, Alaska, Puerto Rico, and Canada, are among our most enthusiastic visitors. Organizations using the Museum for meetings included the American Society of Mammalogists and the American Society of Ichthyologists and Herpetologists for their thirty-first annual meetings, the Lepidopterists' Society for its second annual meeting, the Chicago Ornithological Society, the Illinois Audubon Society, the Kennicott Club, and the Nature Camera Club of Chicago. The total number of visitors at the Museum in 1951 was 1,251,752, an increase of 78,091 over the number for the preceding year. Of the total number, 1,118,412 were admitted without charge—visitors on free days and those admitted free on all days (children, students, teachers, Members of the Museum, and officers and enlisted men of the armed forces). For comparative attendance statistics and door receipts for 1950 and 1951, see page 89.

JAMES NELSON AND ANNA LOUISE RAYMOND
FOUNDATION FOR PUBLIC SCHOOL AND
CHILDREN'S LECTURES

The James Nelson and Anna Louise Raymond Foundation continued to assist students, teachers, and groups of children to understand and enjoy the Museum exhibits and activities. Its program, consisting of tours, illustrated lectures, motion-picture programs, printed stories, and extension lectures in the Chicago public schools is always changing and widening to meet the needs and requests of teachers, students, and children. One extension lecture, "The Indian and His Art," was completely revised and is now illustrated with an all-color motion picture. A new series of film-tour programs

Children see a summer-morning program in James Simpson Theatre of the Museum.



was offered to fit particularly into the courses of study of the Chicago public schools and for general adaptation to the Cook County public schools. "Plant Adventurers" and Nature Magic," two series of Museum Stories for Children, were published and given to the children attending the Saturday morning motion-picture programs for children. The supervisory staff of the Chicago public schools held its January, 1951, monthly meeting in the Museum to learn more about the educational services available to schools. These principals and supervisors were told briefly about the various activities and programs planned especially for students, saw the Museum film, "Through These Doors," and were given short tours of Museum exhibits most useful to school groups as well as a preview of the new hall of historical geology (Hall 37, Frederick J. V. Skiff Hall). Perhaps this meeting and the new series of tours and programs for schools helped to bring about a much greater use of the Museum by the Chicago public schools during this year than has been evident since 1941.

A summary of all activities of Raymond Foundation for the year, with attendance figures, follows:

RAYMOND FOUNDATION ACTIVITIES

ACTIVITIES WITHIN THE MUSEUM

For children	Groups	Attendance	Groups	Attendance
Tours in Museum halls . . .	1,081	34,174		
Lectures preceding tours . . .	55	3,551		
Motion-picture programs . .	29	19,385		
TOTAL			1,165	57,110

For adults				
Tours in Museum halls . . .	376	6,680		
Lectures preceding tours . . .	43	919		
TOTAL			419	7,599

EXTENSION ACTIVITIES

Chicago public schools				
Elementary schools	139	46,499		
Suburban schools	2	550		
TOTAL			141	47,049
TOTAL FOR RAYMOND FOUNDATION ACTIVITIES			1,725	111,758

LECTURE PROGRAMS FOR ADULTS

The Museum lectures held on Saturday afternoons in March, April, October, and November as an additional educational offering of the Museum were attended by 14,655 persons. An effort is made to bring to our platform authoritative speakers working in any of the sciences within the scope of the Museum, but the difficulty of bringing variety and originality into lecture series that have been established for more than half a century can well be imagined. Further, the necessity of variety is emphasized by the fact that to a great extent the audience remains unchanged year after year. It is most encouraging to receive letters and telephone calls expressing appreciation for certain lectures, and helpful suggestions are welcome.

THE LAYMAN LECTURER

The Layman Lecturer of the Museum, Paul G. Dallwig, continued his popular course of Sunday afternoon lectures with an ever-increasing demand for tickets so that by the end of the year there was a waiting list of 2,330. It is regretted that limited space in the halls of the Museum restricts the number of tickets issued. In order to accommodate as many as possible of those applicants who could not be given tickets, Mr. Dallwig presented additional lectures on December 22 and December 29. Again the Museum thanks Mr. Dallwig for the contribution of his unique services.

MEMBERS' NIGHT

On the evening of October 1, the Museum held its first official Members' Night. On this occasion Members were invited to come to the Museum to see the new motion-picture, "Through These Doors," which tells the Museum's story, to preview the new Hall of Fossil Invertebrate Animals and Fossil Plants (Hall 37, Frederick J. V. Skiff Hall), and to visit any or all of the laboratories and workrooms on the third and fourth floors. The research collections, which contain from thousands to millions of specimens of various kinds, were available for inspection. More than one thousand persons attended, and almost all of them expressed regret that the evening was far too short to permit them to cover their entire range of interests. This special event is one of the ways in which the Museum is trying to express its appreciation to its loyal Members for their helpful interest and support.

GIFTS TO THE MUSEUM

Under the will of the late Boardman Conover, Trustee and Research Associate, the Museum received \$50,000 to establish the Conover Game-Bird Fund. Elmer J. Richards, of Chicago, added \$10,000 to the Elmer J. Richards Fund for the purchase of cryptogamic specimens, and Donald Richards, Research Associate in Cryptogamic Botany, gave \$4,000 to the Donald Richards Fund, also for the purchase of cryptogamic specimens, and \$1,000 to establish a fund for travel and cryptogamic research. Walther Buchen, of Chicago, gave \$7,500 for zoological purposes; S. C. Johnson and Son, Incorporated, of Racine, Wisconsin, again gave \$4,000 for research on wax-bearing palms; and Dr. Maurice L. Richardson, of Lansing, Michigan, added \$1,750 to the Maurice L. Richardson Paleontological Fund. The Museum received \$9,000 from Stanley Field, president, to be added to the Stanley Field Special Fund; \$250 from C. Suydam Cutting, of New York, a Patron of the Museum; \$1,000 from an anonymous friend; \$360.40 from the estate of Mrs. Abby K. Babcock; \$648.52 from the estate of Martin A. Ryerson; and \$6,666.67 from the Mrs. Joan A. Chalmers Real Estate Trust. Memorial gifts of money from Miss Margaret B. Conover and Mrs. Eugene S. Talbot, of Chicago, were added to the Conover Game-Bird Fund. Other gifts of money were received from Peder Christensen, Seattle; Henry S. Dybas, Hazelcrest, Illinois; Edward B. McGuinn, Evanston, Illinois; Clarence B. Randall, Trustee of the Museum; Karl P. Schmidt, Homewood, Illinois; Mrs. Ellen T. Smith, Associate, Division of Birds; Rupert L. Wenzel, Oak Park, Illinois; and a number of anonymous givers.

In recognition of her contributions and services, the Board of Trustees elected Mrs. Stanley Field, wife of the president of the Museum, a Benefactor. Donors who have given to the Museum \$1,000 to \$100,000 in money or materials are elected Contributors by the Board of Trustees (see page 102 for names of Contributors). Contributors elected in 1951 are: Mrs. Sherman C. Bishop, of Rochester, New York, and Mrs. Daniel W. O'Dell, of Ithaca, New York (gift of Bishop Collection of salamanders); Charles B. Cory, Jr., of Homewood, Illinois (gift of ornithological books); Dr. Charles H. Seevers, of Homewood, Illinois (gift of collection of rove beetles); and James Witkowsky, posthumously elected (a bequest). A complete list of gifts of materials from individuals and institutions in 1951 is appended to this Report (see page 91). Some of the collections of especial interest or value are described under the headings of the scientific departments.

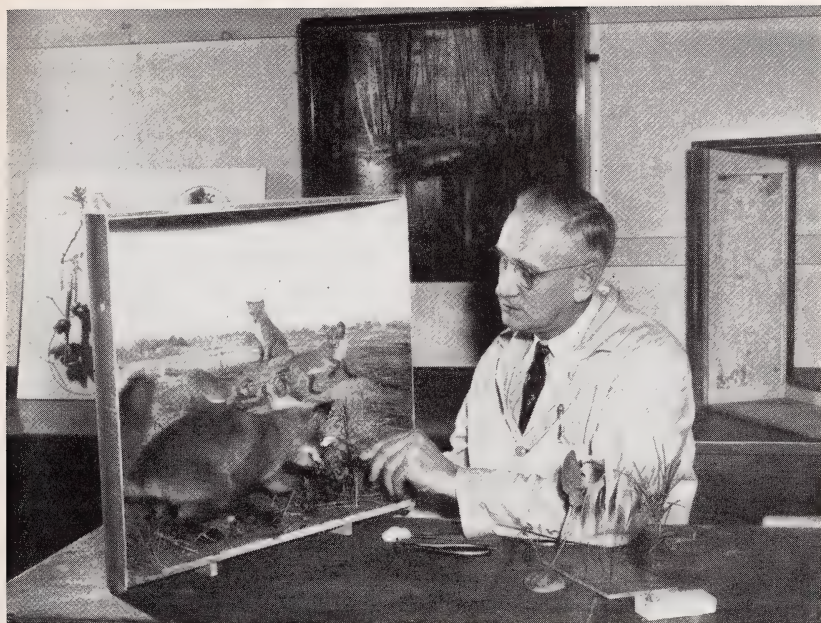
SPECIAL EXHIBITS

A special exhibit on peoples of the United States Trust Territory and Guam, held in Stanley Field Hall during December, presented a series of water colors and drawings by Joseph Feher and photographs by Raymond Sato (assembled and lent by the Honolulu Academy of Arts) and illustrative material from the Museum collections. Other special exhibits during the year were "Song Birds of America," a series of twelve paintings by John Atherton (by courtesy of John Morrell and Company, of Ottumwa, Iowa); a pictorial mural map of Alaska by Muriel Hannah (by courtesy of Northern Consolidated Air Lines of Anchorage); paintings and drawings of Museum exhibits by students of the Junior School of the Art Institute of Chicago; the First Annual Amateur Handcrafted Gem and Jewelry Competitive Exhibition, sponsored by the Chicago Lapidary Club; and the Sixth Chicago International Exhibition of Nature Photography, held under the auspices of the Nature Camera Club of Chicago and the Museum.

THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The program of lending Museum exhibits to Chicago schools through the Department of the N. W. Harris Public School Extension continued in normal operation in 1951. Each public elementary and high school of Chicago received on loan thirty-four portable Museum exhibits of natural-history material. Every tenth school day Harris Extension trucks delivered two exhibits to each school in exchange for the two that they had left at their previous visit. This exchange of exhibits in regular rotation among the schools assures that there will be no repetition in any one school over a period of several years. Since its establishment as a Department of the Museum, Harris Extension has prepared and maintained more than one thousand portable Museum exhibits and has made them available to Chicago public schools to supplement the teaching of natural science. The cases can be carried from classroom to classroom for direct study and discussion, or they can be displayed in the school library or another room accessible to the entire school body.

Over the years many denominational and private schools and other Chicago institutions have made application for Harris Extension service and, after demonstration of their needs and satisfactory guarantees of safe care and adequate utilization of the circulating exhibits, have been added to the list of public schools receiving



Albert J. Franzen, Preparator and Taxidermist, N. W. Harris Extension Department, finishes red-fox exhibit for which Artist John Conrad Hansen painted the background.

service. When the list totaled 514 at the close of the 1950-51 school year, it was clear that, with reduced staff, the preparation of new exhibits was not possible at a rate that would accommodate a growing circulation list. Accordingly, at the beginning of school in September, the policy was adopted of adding to the circulation only newly opened public schools. Special requests for additional instructional material have been increasing somewhat during recent years. Many of these requests come from suburban schools not eligible for regular Harris Extension service. Fifty-one special requests were filled in 1951. Two-thirds of these loans were of bird-skins or mounted birds. In the course of the year, thirty-three of the standard portable exhibits were damaged in circulation, two of them by fire. One hundred and seventy-one cases were repaired in the workshop. Field work of staff members consisted of short trips in the Chicago area for the purpose of collecting botanical and zoological specimens from which to make reproductions for future exhibits and to take color photographs for the assistance of the artists who make the habitat groups for Harris Extension.

STAFF OF THE MUSEUM

E. P. Killip, distinguished botanist and lately retired head curator of the department of botany of the United States National Museum, Washington, D.C., was elected Research Associate in Phanerogamic Botany by the Board of Trustees. John W. Moyer, Chief of the Division of Motion Pictures, was given a leave of absence, effective August 16, to accept a temporary appointment in the foreign service of the Department of State of the United States. On February 1, Mrs. Elsie H. Thomas, who had been employed by the Museum since 1922, retired from her position of Recorder. In order to maintain our association with him, D. S. Rabor of Silliman University, Philippine Islands, visiting Guggenheim Fellow in Zoology, was made a Field Associate on the staff of the Department of Zoology. Ronald J. Lambert and Carl W. Cotton, Assistant Taxidermists, were promoted to Taxidermists; Celestino Kalinowski, of Marcapata, Peru, was appointed Assistant Taxidermist; and Miss Laura Brodie was given the title of Assistant in charge of Illustrations in the Department of Zoology. E. Leland Webber, Assistant Recorder, was made Executive Assistant to the Director of the Museum. Miss Audrey Greeley was appointed Reference Librarian, and Boris Ivanoff was placed in charge of stacks and bindery. Miss Christine Tardy was appointed Assistant in Public Relations following the resignation of Mrs. Helen R. Gordon, who had been secretary in the Division of Public Relations for thirteen years. Other resignations during the year were: George A. Davis, Assistant, Herbarium; Miss Ruth Debus, Reference Librarian; Dr. Sidney F. Glassman, Assistant, Cryptogamic Herbarium; Miss Mary P. Murray, Assistant, Scientific Publications; George Steinhart, Assistant, Department of the N. W. Harris Public School Extension; Miss Phyllis Wade, Secretary, Department of Botany; and Mrs. Winifred E. Weissman, Assistant Reference Librarian.

It is with regret that I record the death on April 7 of John Anderson, employed by the Museum as a carpenter in the Department of Anthropology and in the Division of Maintenance from 1920 until his retirement on pension in 1942.

The Museum thanks its faithful volunteer workers for their help during the year. Names of some of them are included in the List of Staff at the beginning of this Report. Other volunteers are: *Department of Botany*—Miss Margaret Feigley, Dr. George D. Fuller, Philip Garrett, Jack Reeves, Floyd E. Swink, Archie F. Wilson; *Department of Geology*—Mrs. George Langford, Miss Nancy Robertson; *Department of Zoology*—Harry Nelson.

EXPEDITIONS

The Museum conducted eighteen expeditions and field trips in 1951. Their work is described in this Report under the headings of the scientific departments. Expeditions and field trips of 1951 and their leaders are:

DEPARTMENT OF ANTHROPOLOGY: *Southwest Archaeological Expedition*—Dr. Paul S. Martin, Chief Curator

DEPARTMENT OF BOTANY: *Cuba Botanical Expedition, 1950-51*—Dr. B. E. Dahlgren, Curator Emeritus; *Florida Botanical Field Trip*—Emil Sella, Curator of Exhibits; *Southwest Botanical Field Trip*—Dr. Hugh C. Cutler, Curator of Economic Botany; *Texas Botanical Field Trip*—Dr. Theodor Just, Chief Curator

DEPARTMENT OF GEOLOGY: *Eastern States Paleontological Field Trip*—Dr. Robert H. Denison, Curator of Fossil Fishes; *Oklahoma Paleontological Field Trip*—William D. Turnbull, Preparator; *Tennessee Paleontological Field Trips*—George Langford, Curator of Fossil Plants; *Texas Paleontological Expedition*—Bryan Patterson, Curator of Fossil Mammals; *Wilmington (Illinois) Paleobotanical Field Trips*—Curator Langford

DEPARTMENT OF ZOOLOGY: *Colombia Zoological Expedition, 1948-51*—Philip Hershkovitz, Assistant Curator of Mammals; *Co-operative Field Work with United States Fish and Wildlife Service in Gulf of Mexico*—Loren P. Woods, Curator of Fishes; *Field Work for Cave Fishes*—Curator Woods; *Mexico Zoological Field Trip*—Clifford H. Pope, Curator of Amphibians and Reptiles; *United States Navy Medical Research Unit No. 3, Cairo, Egypt, 1949-51*—Harry Hoogstraal (in charge of Sudan Substation), Field Associate, Museum representative; *West Africa Zoological Expedition, 1950-51*—Harry A. Beatty, of New York

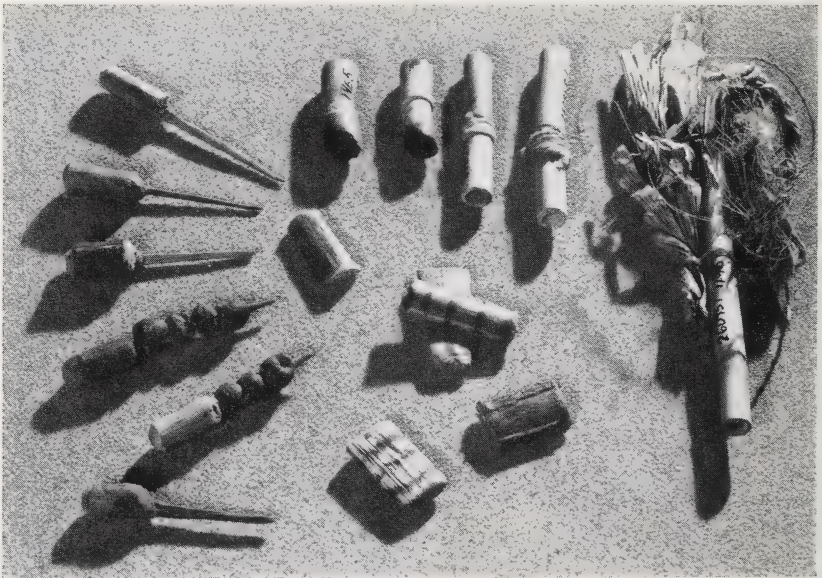
CHICAGO NATURAL HISTORY MUSEUM (and Instituto Tropical de Investigaciones Cientificas, Universidad Autonoma, El Salvador): *Salvadorean Project*—participants in 1950-51: *Botany*, Dr. Norman C. Fassett, professor of botany, University of Wisconsin; *Geology*, Dr. Sharat K. Roy, Chief Curator of Geology; *Zoology*, Dr. Austin L. Rand, Curator of Birds

Department of Anthropology

Research and Expeditions

The Southwest Archaeological Expedition continued its long-term research-excavation program in west-central New Mexico. The goal of this program is a complete delineation of the Mogollon culture, a newly discovered civilization. During recent years Museum archaeologists have uncovered some of its history—namely, that dating from the beginning of the Christian era down to about A.D. 1000, but the record is far from complete and woefully lacking in many details. From knowledge of the area gained by exploring the country by car and on foot and horseback, it seemed evident that Pine Lawn Valley (near Reserve, Catron County, New Mexico) had been occupied several millenia before A.D. 1. The excavations in Tularosa Cave in 1950 (described in the Annual Report) bore out this assumption and yielded a rich harvest of archaeological data. In analyzing these data, however, it became apparent that

These juniper-berry skewers, reed cigarettes filled with tobacco (the earliest reported use of tobacco), and wooden dice—objects dating from A.D. 200 to A.D. 800—are among materials recovered from dry caves in New Mexico by Museum expeditions.



the materials in many categories (spear-throwers, sandals, bows and arrows, clothing, textiles, corn, beans, squash, to name some) were too few to permit reliable analyses, comparisons with similar materials from near-by and distant areas, and statistical manipulation. Further excavations in another dry cave, Cordova Cave, were therefore planned and carried out.

At this point it is well to explain why so-called "perishable materials" (that is, materials that would disintegrate if not protected from weather—clothing, objects of wood and fiber, fur, and the like) are so important. Suppose that one wanted to study American culture in its entirety and that the only available reference for this study is a large mail-order catalogue. If the catalogue were complete, the student would have first-class source material. He would know something about how we dressed, amused ourselves, recorded time, practiced agriculture, and built houses. He could even make inferences concerning our religious and social organization, density of population, and more. But suppose that this catalogue is mutilated and that all the pages describing perishable items (leather, cloth, fur, hair, hides, wood, rubber, paper) are irretrievably lost. The student would then be faced with the impossible task of describing a culture on the basis of the few remaining items. This situation confronted our archaeologists because the sites that had been exposed to centuries of weather produced only artifacts of stone, bone, and baked clay—materials that could give only an incomplete picture of the culture of the Mogollon peoples.

Therefore during 1951, Cordova Cave, a thousand feet above the San Francisco River Valley and near Reserve, New Mexico, was completely dug, a large kiva in an open site was half excavated, and a reconnaissance was conducted. The field season occupied the months of June through September. Dr. Paul S. Martin, Chief Curator, in charge of the expedition, was assisted by Dr. John B. Rinaldo, Assistant Curator of Archaeology; Miss Elaine Bluhm, Assistant; Thomas P. Alder, photographer; and Arnold Besser, Miss Katherine Marjorie Kelly, and Miss Elizabeth Morris (student assistant from Antioch College).

Cordova Cave was probably occupied from about 1000 B.C. to A.D. 1—a significantly shorter time than was Tularosa Cave, which was lived in for almost two thousand years. A great fire that occurred in Cordova Cave during the Pine Lawn period (150 B.C.–500 A.D) destroyed many of the precious objects that our archaeologists sought and apparently caused the Indians to shun the cave thereafter except for temporary camping. For these reasons (fire and shorter span of occupation), fewer perishable specimens were re-

covered from this cave than from Tularosa Cave, but some valuable specimens were unearthed that, when added to the 1950 collections, will aid materially in solving some of the problems that have been especially puzzling to our archaeologists.

The positive contributions to the knowledge of the Mogollon culture were many and valuable: (1) Several hundred tools of stone from the Cochise period (before 500 B.C.) were recovered from well-defined layers. Since these layers can be relatively dated, it is now known when certain tools of stone came into use and went out of fashion—a sequence that was previously lacking. This knowledge will enable us to date early stone tools recovered by future explorations. (2) The stratigraphy or dating by position of Cordova Cave corroborated that of the 1950 season. (3) Some artifacts not previously known from the area were unearthed, namely, new types of projectile points, a new sandal type, and painted *tablitas*. (4) Evidence of Apache occupation was found in the top layer of the cave. This consisted of a cache of horse(?) hides and basketry. From this information it will be possible to place the date of the Apache occupation of the Reserve area relative to other cultures. At the moment it appears probable that the Apaches entered the area some centuries after its abandonment by the Mogollon people. When the specimens are completely analyzed, more information will be forthcoming; but on the basis of only a few hundred specimens from two caves, positive and specific conclusions are, of course, not possible. Only in a most general way can one hazard a guess that the associated complex of traits of the Mogollon culture was similar to those traits possessed by many of the ancient tribes of the Great Basin or Intermontane area (Oregon and Utah southeastward to northern Mexico).

In addition to the work in Cordova Cave, two other important projects were carried forward. One was the partial excavation, under the direction of Miss Bluhm, of a large ceremonial room situated in an open site. Such a structure is usually referred to as a kiva, and on the basis of information derived mainly from Indians it is assumed that such a structure was a sacred place in which secret ceremonies were conducted. Since this kiva is unique in Pine Lawn Valley, it was chosen as a valuable spot for operations. The actual excavation of such a large structure (30 feet long, 25 feet wide, 7 feet deep) was a slow, arduous task because the walls of masonry had toppled into the structure. About 1,000 cubic yards or about 150 tons of dirt and rocks were removed with wheelbarrows. Work will be completed next season, but it is possible to say now that the kiva may fall into the latter part of what we call



Head of a large clay figurine (A.D. 500 to A.D. 800) from Veracruz, Mexico, is one of the antiquities received in an exchange with the National Museum of Mexico.

the Reserve period and may date from about A.D. 1050 or A.D. 1100. The other undertaking was a reconnaissance for new sites in western New Mexico and in east-central Arizona. Dr. Herbert C. Taylor, Jr., of Western Washington College, Bellingham, Washington, formerly a teaching assistant at the University of Chicago, was in charge of this work, which was sponsored by the Department of Anthropology, University of Chicago, and was tailored to dovetail with the intensive investigations carried on by the Museum. Dr. Taylor spent ten weeks on this project, operating within a radius of eighty miles from the Museum camp, and found 75 sites

of major importance. The analysis of the survey is yet to be made, but a few tentative conclusions may be drawn from the data: (1) The late manifestations of the Mogollon culture (Reserve phase) cover a large area—much larger than we had formerly realized. (2) The culture-complex known as Mimbres extends at least as far north-west as Glenwood, New Mexico. (3) The region east of Springerville, Arizona, was a cultural transition zone between the Puebloan and Mogollon peoples. The results of the survey will be ready for publication in 1952.

During the year Dr. Alexander Spoehr, Curator of Oceanic Ethnology, continued preparation for publication of his report on the Anthropological Expedition to Micronesia, 1949-50, which will be issued in two parts: one on the ethnology of contemporary Saipan and the other on the prehistory of the Marianas as revealed by the archaeological survey and excavations conducted by Curator Spoehr on Saipan, Tinian, and Rota. In July he studied documentary material at major libraries in the eastern states in connection with the preparation of the report. This research was made possible by a Grant in Aid awarded to him by the Social Science Research Council.

George I. Quimby, Curator of Exhibits, continued research in North American ethnology in connection with the exhibition program. Particular emphasis was placed on an examination of materials collected from the Crow, Blackfoot, Assiniboin, Plains Cree, Plains Ojibwa, Plains Sioux, Arapaho, Cheyenne, Kiowa, Kiowa Apache, Comanche, Ute, Paiute, Panamint, Shoshone, Paviotso, Flathead, Bannock, Kutenai, Wasco, Klickitat, Yakima, and Nez Perce tribes. He completed a report on Indian trade-silver east of the Mississippi and is preparing a description of the Museum's collection of thirty-five portraits of Indians and western scenes painted in oil by George Catlin during the period from 1831 to 1837, a collection that is significant because it has been intact as a collection since 1837. A number of the portraits (among them "Smoke, Ponca Chief," "Wolf, Mandan Chief," and "White Cloud, Sauk and Fox Chief") have been placed on permanent exhibition in Mary D. Sturges Hall (Hall 5, Indians of the Woodlands and Prairies).

Donald Collier, Curator of South American Ethnology and Archaeology, continued his study of the collection excavated in 1946 by the Archaeological Expedition to Peru and brought nearly to completion his report on this work. In connection with his activities as a member of the committee on carbon-14 dating of the American Anthropological Association and the Geological Society of America, he made a stratigraphic and statistical analysis of Middle and

South American carbon-14 dates that was incorporated in the detailed report published by the Society for American Archaeology. Dr. Wilfrid D. Hambly, Curator of African Ethnology, continued research in craniometry of the Pacific regions. The books by Curator Hambly on craniometry that have been published by the Museum are *Cranimetry of New Guinea*, *Craniometry of Ambryn Island*, and *Cranial Capacities, A Study in Methods*. "Craniometry of Malekula and New Calidonia" is in manuscript, and "Craniometry of the Solomon Islands and New Ireland," last of the series, is in preparation. A bibliography of African anthropology (a supplement to *Source Book of African Anthropology*, Museum Press, 2 volumes, 1937) is awaiting publication.

During the first months of the year Assistant Curator Rinaldo collaborated with Chief Curator Martin in preparing a report on the excavations during the summer of 1950 of Tularosa Cave and, for use in this research, made a graph showing the fluctuations in pottery-type popularity in the various occupation levels of the cave. He also assisted John W. Moyer, staff cinematographer, in the completion of a unified story of the excavations, including several laboratory sequences taken in the Museum. During the summer he assisted Chief Curator Martin in the excavation of Cordova Cave, and after his return from the field in the fall he started a precise analysis of the stone and bone artifacts from the summer's excavations preliminary to a report on the season's work.

Dr. Fay-Cooper Cole, Research Associate in Malaysian Ethnology, worked at the Museum during the month of August on the Bukidnon collection from the Philippines, on which he is preparing a monograph. Research Associate Cole collected the Bukidnon materials in 1910 when he went to the Philippines for the Museum on the R. F. Cummings Philippine Expedition. At that time he was Assistant Curator of Malayan Ethnology at the Museum.

Accessions—Anthropology

At the end of the year the long-pending exchange with the National Museum of Mexico was completed. As a result of this transaction the Museum has received an extensive collection of Mexican antiquities consisting of 1,126 specimens ranging in age from the second millenium before Christ to the Spanish Conquest. Included is a representative selection of figurines and pottery from the Archaic cultures of the Valley of Mexico; pottery, figurines, and ornaments from the various phases of the Classic cultures of Teotihuacan and

Monte Alban; and pottery, ornaments, and stone sculpture from the Toltec and Aztec cultures of the Late period. The prehistoric cultures of western Mexico and the Mexican Gulf Coast are also represented. This collection, which was selected to supplement the Museum's Middle American collections and fill gaps in them, will be important in the future reinstallation of Hall 8 (Archaeology and Ethnology of Mexico and Central America). Archaeological and ethnological specimens from North America and Oceania were exchanged for the Mexican collection. This is the largest and most important anthropological exchange carried out by the Museum in many years. The exchange will benefit both this Museum and the National Museum because now only by exchange could the two museums have acquired collections of this size and quality.

Rearrangements—Anthropology

The work of rehousing the extensive collection of prehistoric and recent textiles from many parts of the world was completed during the year by Roger Grange, assistant. Previously the textiles were scattered according to tribe and area in various badly overcrowded storerooms where they were not readily available to the staff or to visiting students. The textiles are now arranged in a single room in steel cases containing flat wooden drawers so big that only the largest specimens need be folded. Fragile textiles are laid on cardboard and covered with clear sheets of polyethylene plastic that can be removed for close study of the textiles and for photography, an arrangement that permits sorting and examination of the specimens without damaging them. Ample work tables and excellent fluorescent lighting make the textile room an ideal place to conduct research. The textile collection in its new housing has already been put to good use by students of textiles.

Exhibits—Anthropology

Under the direction of Curator of Exhibits Quimby nineteen new exhibits (including one diorama) were completed during the year by Gustaf Dalstrom, Artist, and Alfred Lee Rowell, Dioramist, with the assistance of Walter C. Reese, Preparator, and John Pletinckx, Ceramic Restorer. Six of the new exhibits were installed in Mary D. Sturges Hall (Hall 5), thus completing this hall, which was opened to the public on May 1. The new hall shows the culture-

types of the North American woodlands and prairies as they were in historic times (1700-1900). The thirteen remaining exhibits were installed in Hall 6, which, when complete, will contain more than fifty exhibits (including four dioramas). This hall is divided into three sections: Indians of the Plains, Intermountain tribes showing Plains influence, and Indians of the California culture area. During the year some twenty additional exhibits were planned and laid out for installation in the new hall in the first half of 1952.

From the pine-covered mountainous country surrounding Tularosa Cave, a dry cave in Apache National Forest, New Mexico, plants were collected for comparison with the many specimens excavated from the cave by Museum archaeological expeditions.



Department of Botany

Research and Expeditions

During the year Paul C. Standley, Curator Emeritus of the Herbarium, continued his exploration and studies of the flora of middle Central America, devoting his time to collections in Honduras, one of the countries whose vast flora still is imperfectly known. Part of December, 1950, was passed in the Department of Ocotepeque, on the borders of Guatemala and El Salvador, where no botanical work had ever been done. Exploration in 1951 in the central departments of El Paraíso and Francisco Morazán resulted in a collection of some 3,200 specimens that include many species and several genera of flowering plants new to the Honduran flora and a satisfactory number of species new to science. Study and determination of this material and preparation of descriptions of the new species of these and other collections required a great deal of time. Curator Emeritus Standley determined also a large collection of Mexican and Central American plants made more than fifty years ago that was forwarded from Chicago to Honduras for this purpose. Other plants likewise sent from Chicago for study included an extensive collection made in Chiapas, Mexico, by Dr. Margery C. Carlson, of Northwestern University, and smaller ones from Costa Rica transmitted by the Museo Nacional of San José. Some progress has been made in preparation of a dictionary of useful plants of all Central America and a complete catalogue of the whole Central American flora.

The Curator Emeritus of Botany, Dr. B. E. Dahlgren, continued his studies of *Copernicia* palms. With the aid of the S. C. Johnson and Son Fund, two visits were made to Cuba. On the first and more extensive of these, in the early months of the year, localities in Matanzas and Las Villas provinces were visited briefly on the way eastward from Havana to Camagüey. This year, as well as on various former occasions, the savanas readily accessible from this provincial capital proved to be the most important localities discovered. Camagüey also serves as the most convenient point of departure for explorations in the general region of greatest *Copernicia* concentration, which extends into the adjacent easternmost province, Oriente, where more work is planned for 1952. Much new palm material, notes, and several hundred photographs were brought back to the Museum, together with a collection of the phanerogams and soil algae of special ecological interest in connection with the distribution of some of the *Copernicia* species. The latter collections

were made by J. Francis Macbride, Curator of Peruvian Botany, who, after completing the manuscript for another number of his "Flora of Peru," had volunteered his assistance. On the return trip by way of Cienfuego, a hasty excursion was made with Dr. E. D. Clement and Sr. Valiente, of the Atkins Garden and Laboratory of Harvard University at Soledad, to the south coast of the eastern peninsula of Zapata for mature seeds of a species apparently restricted to this area. A brief trip to Cuba in August was undertaken solely for the purpose of gathering the results of experiments made in the early spring and collecting certain seeds for experimental growing at the University of Chicago and elsewhere.

Dr. Earl E. Sherff, Research Associate in Systematic Botany, continued his studies of Hawaiian plants and completed his revision of the genus *Nototrichium*. He also described a number of novelties, especially new sections of *Dahlia* for its epiphytic member and the tree-dahlias, various East African species of *Bidens*, and several Araliaceae and Leguminosae. Llewelyn Williams, Associate in Forest Products, spent considerable time in the Far East and Central America studying forest products and collecting woods for exhibition purposes. Dr. Norman C. Fassett, while on leave of absence from the University of Wisconsin, spent the early part of the year at the Tropical Institute in San Salvador as the botanical representative of the Museum, collecting aquatic plants in El Salvador, Guatemala, and Mexico. His monographic studies of these and other pertinent collections are now essentially completed.

Dr. Theodor Just, Chief Curator, accompanied a small group of paleobotanists of the University of Illinois and the Illinois State Geological Survey on a collecting trip to Iowa and Texas. The party collected large numbers of coal balls for study of structurally preserved plant-fossils and obtained in Texas the trunk of an undescribed cycadeoid and samples of fossil wood found at the type locality. Chief Curator Just continued his studies of fossil cycads and cycadeoids and of the geographical distribution of fossil ferns and pteridosperms. In addition, he prepared in collaboration with Dr. José Cuatrecasas, Guggenheim Fellow, a synopsis of the living and fossil Humiriaceae.

Dr. Hugh C. Cutler, Curator of Economic Botany, continued his studies of the archaeological plant material from Tularosa Cave, New Mexico. On an expedition during June and early July he studied and collected plants now growing about the cave, as the archaeological material of the cultivated plants shows a gradual development of the recent kinds from the more primitive ones of the earlier levels of Tularosa Cave. Modern Indian corn and squash



This reproduction of a subtropical flowering *Tillandsia* shows this air plant of the pineapple family as it is quite often found growing in the branches of trees (Hall 29).

were studied in experimental plantings near Chicago in order to compare the range of variation with that exhibited by the archaeological material. A large part of Curator Cutler's time was spent in organization of the Museum's extensive wood collections, which consist of about forty thousand specimens, a great number of them authenticated by herbarium specimens taken from the same tree as the wood. Mrs. Ann Bigelow and Robert Yule have prepared and labeled more than fifteen thousand specimens for the Museum's collection and for exchange with other institutions. Archie F. Wilson, an experienced amateur wood-collector, assisted in this work by cutting a large collection of Ecuadorean tree trunks to the standard size of the specimens in our collection.

Dr. Julian A. Steyermark, Curator of the Herbarium, continued to devote the greater portion of his time toward completion of the study of his large collections from Venezuela. The first part of his "Contributions to the Flora of Venezuela," consisting of descriptions of new species resulting from his study and that of various specialists, was published by the Museum in May. The second part of this work, which will complete the description of the new species, is now in press. Altogether, close to six hundred species and nine genera new to science, in addition to a large number of new varieties and forms, have resulted from the study of these collections. Critical investigation of particular groups in this study resulted in revisions of the rare genera *Tapeinostemon* (see page 82) and *Platycarpum*, the latter having been brought to light after nearly one hundred and fifty years of obscurity. The families *Rubiaceae*, *Euphorbiaceae*, *Lentibulariaceae*, and *Compositae*, in which Curator Steyermark specializes, continued to yield various novelties now awaiting publication. In addition, much time was given to identification of miscellaneous collections that were sent in for determination from the United States and other countries.

Continuing his field work in Missouri as Research Associate of Missouri Botanical Garden, Curator Steyermark conducted a number of botanical collecting trips to that state between March and October. These trips yielded new information on the detailed distribution of species and varieties of the flora of Missouri and added a total of nine species not previously found in that state. The collections, to be incorporated in the herbaria of Missouri Botanical Garden and Chicago Natural History Museum, will eventually serve as a basis for the complete record of geographical distribution of each species in Missouri as shown on maps to appear in a revised annotated catalogue of the flowering plants and ferns of Missouri, published in 1935 in collaboration with E. J. Palmer, formerly of the Arnold Arboretum, Jamaica Plain, Massachusetts. Work was completed on the separation of type specimens from the main collection, making these important specimens more readily accessible.

The Curator of Cryptogamic Botany, Dr. Francis Drouet, devoted most of the year to curatorial work. The segregation of forty thousand type specimens from among the eight hundred thousand sheets on file in the cryptogamic herbarium was completed. These specimens are now arranged alphabetically in a special case. Another project, with the aid of Dr. Sidney F. Glassman, Assistant from January to September, was likewise finished. The five thousand photographs of fungi and the ten thousand original notes and drawings by the late Dr. Edward Thomson Harper, whose large collec-

tions came to the Museum in 1920, were attached to the herbarium sheets, thus greatly enhancing the value of one of the Museum's most important collections of cryptogams. For this work Dr. Glassman made prints of the Harper negatives, which are now being transferred to the Division of Photography. Curator Drouet and Dr. Glassman spent considerable time in preparing various collections of cryptogams for mounting and in filing the twenty-five thousand new specimens that were mounted during the year. Dr. Drouet identified some eight thousand algae received for determination from correspondents in various parts of the world. Harold B. Louderback and Dr. Joseph Rubinstein, of Chicago, assisted in the onerous work of shifting the entire herbarium so that the collections would be equally distributed within the cases.

Some progress was made toward completing Curator Drouet's revision of the unicellular blue-green algae in co-operation with William A. Daily, of Butler University, who has now made photomicrographs of more than five hundred of the type specimens involved. Mr. and Mrs. Daily spent several weekends at the Museum in research on the collections of Myxophyceae and Characeae. Dr. Hanford Tiffany, Research Associate, completed in collaboration with Dr. Max Britton, also of Northwestern University, a treatise on the algae of Illinois now awaiting publication. Donald Richards, Research Associate, continued his studies of bryophytes, and Miss Margaret Feigley, volunteer worker, identified large numbers of bryophytes. Dr. Glassman completed his manuscript on the flora of Ponape (Caroline Islands) before he left in September for the University of Wyoming.

While holding a John Simon Guggenheim Memorial Foundation Fellowship, Dr. José Cuatrecasas, former Curator of Colombian Botany, carried on necessary studies at the Museum preliminary to the preparation of a catalogue of the flora of Colombia, using as a basis his own extensive collections as well as others represented chiefly in the Museum's own herbarium. In addition he studied numerous specimens received on loan from the United States National Museum, New York Botanical Garden, Herbario Nacional Colombiano, and Facultad de Agronomía del Valle. The Colombian species of the following families have already been studied critically: *Araliaceae*, *Anacardiaceae*, *Bombacaceae*, *Burseraceae*, *Caprifoliaceae*, *Connaraceae*, *Euphorbiaceae* (gen. *Hieronyma*), *Linaceae*, *Myrsinaceae*, *Proteaceae*, *Rutaceae*, *Sapindaceae*, *Simarubaceae*, *Sterculiaceae*, *Theophrastaceae*, *Thymeleaceae*, *Tiliaceae*, and certain difficult genera of the *Compositae*. Critical taxonomic work on some members of the flora of Colombia necessitated study of species and specimens



Paco fruits (4 inches long and 2 inches in diameter) belong to a new species from Colombia discovered and described as *Grias multinervia* Cuatr. by Dr. Jose Cuatrecasas.

from other South American countries (Venezuela, Ecuador, Peru, and Brazil), especially in the families *Bombacaceae*, *Sterculiaceae*, *Tiliaceae*, *Moraceae*, and *Brunelliaceae*. Taxonomic studies of several genera of *Compositae* (*Senecionae*, *Diplostephium*, *Espeletia*) were continued, and several contributions dealing with many new or critical species gleaned mainly from his personal collections were published or are awaiting publication. About two thousand South American specimens (chiefly Colombian) sent by collectors or various institutions as gifts, exchanges, or loans have been named, especially in the groups on which Dr. Cuatrecasas worked in recent years.

Emil Sella, Curator of Exhibits, and Artist-Preparator Samuel H. Grove, Jr., left early in March on a five-week trip to Florida covering most of the state, including some of the keys, to collect flowering specimens from plants of local and tropical species needed to supplement various families in the synoptic exhibits in Hall 29. A stop of several days was made near Tallahassee, where a number of branches of southern conifers were collected with the generous assistance of Dr. Herman Kurz and Dr. Chester S. Nielsen, of Florida State University. After restoration these branches will be added to the exhibits of North American woods in Hall 26. Several visits were made to the United States Plant Introduction Garden at Coconut Grove, where photographs of tropical species and some important specimens for reproduction were obtained through the kindness of Dr. Harold F. Loomis.

Mrs. Effie M. Schugman, with some assistance during the summer, mounted more than twenty-five thousand specimens of cryptogams and attended to the packaging of numerous loans and of the 5,870 cryptogams sent to other institutions and individuals in exchanges. Mr. Yule prepared most of the paper packets used as containers for these specimens, in addition to those required during the first few months of 1952, before he was transferred to the phanerogamic division in September. Approximately twenty-six thousand specimens were wet-poisoned and mounted for the phanerogamic herbarium by George A. Davis, Assistant, and associates. Mrs. Jennie Beitzel mounted thousands of type photographs and filed these and all mounted phanerogamic specimens.

Accessions—Botany

Although no major collections were added to the phanerogamic herbarium during the year, numerous smaller ones were received. The largest single collection, of 862 plants of Honduras collected by Dr. Louis O. Williams and Antonio Molina of the Escuela Agrícola Panamericana, was sent in exchange. Gifts include 209 plants of Missouri from E. J. Palmer, 644 plants of Illinois and Indiana from Floyd E. Swink, 187 plants of Utah and Indiana from John W. Thieret, and 125 plants of Illinois from G. S. Winterringer of Illinois State Museum. Other accessions include 410 plants of Peru from Dr. Felipe Marín (purchase); 830 miscellaneous plants, mostly from Central and South America, from the United States National Museum (exchange); 500 plants of Sweden from Gosta Kjellmert (exchange); 200 plants of Japan from J. Ohwi, of Tokyo Science

Museum (exchange); 200 plants of Austria from the Botanisches Institut und Botanischer Garten of the University of Vienna, collected by Dr. H. Neumayer (exchange); 182 plants of Mexico from the University of California, collected by Annie Alexander and Louise Kellogg (exchange); and 175 plants of Costa Rica from Missouri Botanical Garden, collected by Hugh Iltis and Richard Holm (exchange). More than 29,500 cryptogams were purchased with the Elmer J. and Donald Richards Funds. Noteworthy among the collections thus acquired are 20,000 cryptogams from Dr. P. O. Schallert, of Altamonte Springs, Florida; 5,600 lichens from Dr. Camillo Sbarbaro, of Genoa, Italy; and 1,067 algae and bryophytes from the Vitenskapsselskapets Museum of Trondheim, Norway. Cryptogams received in exchanges include 2,104 from the Conservatoire Botanique of Geneva, Switzerland, and 1,600 from the Naturhistorisches Museum of Vienna, Austria.

Exhibits—Botany

Two important reproductions were added to the flowering-plant exhibits in Martin A. and Carrie Ryerson Hall (Hall 29, Plant Life). One model is a fruiting branch of elderberry (*Sambucus canadensis*), a local member of the honeysuckle family, assembled by Artist-Preparator Grove. The other model, made by Curator of Exhibits Sella, is an epiphytic bromeliad (*Tillandsia fasciculata*) in flower, strikingly different in appearance from the related and well-known Spanish moss of the South of the same genus of the pineapple family. The living material required for this reproduction was collected during the Florida Botanical Field Trip. The exhibits in Hall 29 of mushrooms, liverworts, and mosses and of the birch family were reconditioned and rearranged in rebuilt cases of increased depth. In the Hall of Foreign Woods (Hall 27) a specimen of Norfolk Island pine (*Araucaria*), a gift from O. A. Oaks, of Wilmette, Illinois, was installed by Preparator Mathias Dones. The following leafy branches were added to the wood exhibits in Charles F. Millsbaugh Hall (Hall 26, North American Trees): cucumber tree (*Magnolia*), persimmon (*Diospyros*), beech (*Fagus*), red oak (*Quercus*), river and yellow birch (*Betula*), black walnut (*Juglans*), and black tupelo (*Nyssa*). These were assembled by Artist-Preparator Milton Copulos, except the branch of beech, which was made by Artist-Preparator Grove. The life-like appearance of the plastic leaves used in these exhibits invites close observation. The success of preparing leaves in plastic, a technique developed at the Museum,

depends largely on the transfer of natural details to metal dies and proper control of heat and pressure during the process of molding. Preparator Frank Boryca is continuously occupied with making the foliage needed for all reproductions. A preserved branch of white cedar (*Thuja*) for Hall 26 was restored by Curator Sella. Chief Curator Just planned and supervised the preparation and installation of the paleobotanical exhibits now on display in Hall 37.



Rhynia Gwynne-Vaughani Kidston and Lang is one of the earliest and most primitive vascular plants ever found. It was discovered about forty years ago near the village of Rhynie in Aberdeenshire, Scotland, in chert of Lower-Middle Devonian age and later described in great detail because of the remarkable state of preservation of its external and internal structural features. It was a rootless and leafless marsh plant about eight inches high, with creeping underground and upright stems. This life-size reconstruction, the first ever made, was modeled in glass by Emil Sella, Curator of Exhibits, Department of Botany, and is exhibited in the case showing the principal groups of the plant kingdom now placed on display in the new Hall of Fossil Invertebrate Animals and Fossil Plants (Hall 37).

Department of Geology

Research and Expeditions

Dr. Sharat K. Roy, Chief Curator of Geology, spent six months in El Salvador as the Museum's representative in geology at the Tropical Institute. El Salvador being primarily a land of volcanoes, both active and dormant, Chief Curator Roy availed himself of the opportunity offered and devoted most of his field work to studying the structure of the main groups of volcanoes and making a representative collection of the rocks composing them. Other important field work in El Salvador consisted of securing pertinent data on the fossiliferous marine limestone at Metapan and on the lacustrine limestone, partly oolitic and partly fossiliferous, near Carolina (Metapan and Carolina are small towns located, respectively, at the northwest and northeast sides of El Salvador). While engaged in work around Carolina, a rather uncommon occurrence of asphalt mixed with opalized silica in basalt was observed. Samples were collected with the hope that the origin of the asphalt could be determined. The occurrence of asphalt and other varieties of bitumen in igneous rocks has been noted previously, but the determination of their origin has been difficult and not always conclusive.

Early in May a major disaster again struck southeastern El Salvador. Without a warning tremor, two shocks of magnitude $6\frac{1}{4}$ all but destroyed several towns and killed and injured several hundred people. The catastrophe offered Chief Curator Roy an unexpected opportunity for first-hand field study of the stricken areas. He visited the devastated towns and neighboring regions several times and took numerous photographs and copious notes on evidences that might furnish information regarding the origin, epicenter, and intensity of the earthquake. On his way back to the States he spent some days in Mexico and made a preliminary survey of the new volcano Paricutin. He expects to return to Mexico in 1952 for a more detailed study of the volcano.

Studies of meteorites by Chief Curator Roy in collaboration with Robert K. Wyant, Curator of Economic Geology, continued, and a paper on the Benld meteorite was published by the Museum during the year. Curator Wyant, who was to accompany Chief Curator Roy to El Salvador but was unable to do so, prepared a complete bibliography of the geology of El Salvador that was of great help in familiarizing Chief Curator Roy with the various aspects of the geology of El Salvador and will be of still greater help when the



Izalco, newest volcano in El Salvador (born in 1770), was photographed midway in his successful climb to the summit by Dr. Sharat K. Roy, Chief Curator of Geology.

results of the work done in El Salvador are being made ready for publication. Curator Wyant spent much of his time in the chemical laboratory in analytical work. He made detailed quantitative chemical analyses of several stone meteorites and of sedimentary rocks and from the bulk analyses determined the mineralogical composition of the stone meteorites. In addition he made a statistical study of the distribution of calcium, magnesium, and silica in meteorites and examined thin-sections of all the feldspar-rich silicate meteorites in the Museum collection.

George Langford, Curator of Fossil Plants, devoted his time almost entirely to cataloguing, preparing, and identifying Upper Cretaceous and Lower Eocene plants from the clay deposits of western Tennessee, northern Mississippi, and northern Alabama. The specimens, represented largely by leaves, were collected by him in June and October with the assistance of Dr. R. H. Whitfield, Associate in Fossil Plants, and Eugene S. Richardson, Jr., Curator of Fossil Invertebrates. Curator Langford also spent several days at various times at the strip coal mines near Wilmington, Will County, Illinois, collecting Pennsylvanian flora and fauna. On these trips he was frequently accompanied by Mrs. Langford, who also volunteered her services to the Museum for nearly a month to assist in preparing the fossil plants collected during the year. As all of these fossils were collected from a clay deposit, it was

necessary to remove the adhering clay before the fossils could be identified and permanently preserved. She did this with great skill and patience.

Until the reopening on October 1 of Frederick J. V. Skiff Hall (Hall 37, Fossil Invertebrate Animals and Fossil Plants) Curator Richardson was engaged almost entirely in selecting, checking, identifying, and labeling specimens for the new exhibits in that hall. Since then he has been occupied chiefly in reorganizing the storage of specimens in the study collection. In the new exhibits fewer specimens have been used, with the result that several thousand excellent fossil invertebrates were left over as surplus and had to be removed to the study collection. Most of these have now been placed in their proper sequence in the study collection, after their identifications were checked and new labels typed. In the course of this work many poor specimens or specimens with incomplete data were put aside to provide more space for the ever-increasing study collection.

Dr. Robert H. Denison, Curator of Fossil Fishes, completed a paper on the Late Devonian fresh-water fishes of the western United States that was published during the year by the Museum. He is now engaged in working on the Early Devonian fishes collected in Utah in 1949 and 1950. The first part of this study dealing with one group of ostracoderms (Osteostraci) is ready for publication, and work on other ostracoderms (Heterostraci) is under way. The environment of the earliest vertebrates is another problem that has occupied his attention. Curator Denison visited a number of fossil-fish localities in the eastern states during August and obtained collections of Silurian ostracoderms in Pennsylvania, northern New Jersey, and southeastern New York and a number of Devonian fishes from the black shales of western New York and from the limestones of Ohio.

Dr. Rainer Zangerl, Curator of Fossil Reptiles, prepared an annotated bibliography on marine paleoecology of fossil reptiles and Recent turtles for the National Research Council's "Treatise on Marine Ecology and Paleoecology." His revision of the turtles of the family Toxochelyidae is expected to be ready for publication early in the year. He also spent a considerable amount of time in preparing in detail one of the nothosaur skeletons from the Alcova limestone of Wyoming in anticipation of a visit by Professor Bernhard Peyer of the University of Zurich, the foremost authority on nothosaur morphology. Curator Zangerl made a study trip to the University of California at Berkeley, accompanied by Professor Peyer, and visited the major fossil-vertebrate localities along the

way. Of particular interest were the Western marine Triassic areas and the collections from these beds at the University of California. On a weekend excursion to investigate some Pennsylvanian deposits in west-central Indiana, noticed by Curator Zangerl earlier in the year, he and Professor Peyer discovered a narrow band of highly bituminous shale that is extremely rich in vertebrate and invertebrate fossil remains. Curators Zangerl, Richardson, and Denison made a second trip to this locality later in the year.

The most interesting event in the Division of Fossil Mammals during the year was the discovery in the Early Cretaceous of northern Texas of molar teeth of the group from which all living mammals, with the exception of the egg-laying monotremes, have descended. Although few in number, these teeth demonstrate that the origin of mammals of placental and marsupial grade dates back to at least 125 million years ago. In addition, they further clarify our knowledge of mammalian relationships during the Age of Reptiles and, most important of all, perhaps, contribute greatly to an understand-

The intensity of the disastrous earthquake that struck southeastern El Salvador in May, 1951, may be judged by these photographs taken by Chief Curator Sharat K. Roy.



ing of the course of evolution followed by the mammalian dentition. An account of these specimens and a discussion of their significance will be prepared by Bryan Patterson, Curator of Fossil Mammals. One of the most notable achievements in the history of the Department of Geology was the work of the Marshall Field Paleontological Expeditions to Argentina and Bolivia during 1922-24 and 1926-27. These expeditions, under the direction of Elmer S. Riggs, Curator of Paleontology at that time, brought together magnificent collections of fossil mammals from a number of Cenozoic formations. Unfortunately, it has not been possible to realize the potential importance of these collections because precise identification of many of the specimens was not feasible from the literature alone and could only be done by examination of material in the museums of Argentina. The opportunity to carry out this long-needed work has now been afforded by the award of a John Simon Guggenheim Memorial Foundation Fellowship to Curator Patterson for research on South American fossil vertebrates. Curator Patterson left for Argentina near the end of the year and will devote 1952 to the task. Upon his return it will at least be possible to describe the collections in a manner that they deserve.

The program of field work in the Early Cretaceous Trinity sands of northern Texas, a collaborative undertaking with Texas Memorial Museum, begun in 1950, was continued during the year. Curator Patterson and Chief Preparator Orville L. Gilpin devoted most of April and May and part of June to excavating, washing, and sifting the bone-bed that yields the fragmentary remains of mammals and other vertebrates. The concentrate from approximately thirteen tons was brought back to the laboratory, where it was reprocessed before the laborious task of sorting under the microscope was begun, and, to date, nearly eighty specimens of mammals have been found. The significance of this figure becomes apparent when it is realized that in all the world only some half-dozen mammals of Early Cretaceous age had previously been discovered. In addition to these forms, additional specimens of triconodonts have been recovered and multituberculates have begun to appear for the first time since this study began.

In September Preparator William D. Turnbull and Priscilla F. Turnbull, Assistant in Fossil Vertebrates, accompanied by Richard Konizeski, of the University of Chicago, made a short trip to Norman, Oklahoma, and collected an excellently preserved and well-articulated skeleton of the early Permian pelycosaur *Cotylorhynchus romeri*. It is closely allied to *Casea* and will be an important addition to the Museum's collection of Permian reptiles.

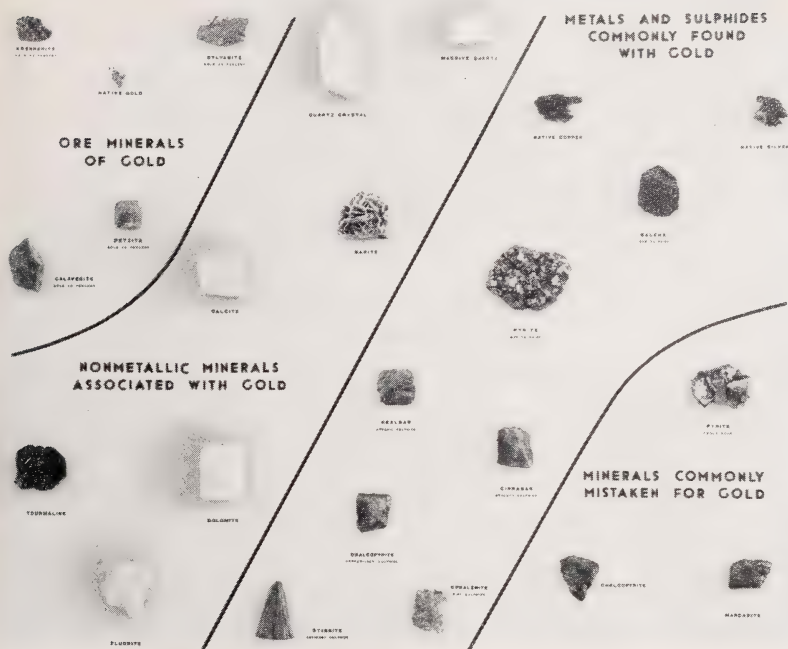
Accessions—Geology

The most valuable accession of fossil plants this year was the paleobotanical collection of the Walker Museum of the University of Chicago. This extensive collection of fossil plants from various geological ages and from various localities, received by the Museum as a gift, was assembled during a period of nearly fifty years by expeditions, purchases, and donations from many individuals. Coal-measure plants, including numerous coal balls, constitute the largest single part of the collection, and specimens from the Mesozoic and Tertiary complement the Museum's existing collection. This gift will permit expanded activity in the field of paleobotany and provide excellent material for exhibition. Through the generosity of Jon S. Whitfield, of Evanston, Illinois, the invertebrate-fossil collection was enriched by 87 specimens from the Pennsylvanian coal-swamp nodules of the Braidwood-Wilmington area, Illinois. These specimens are the cream of Mr. Whitfield's personal collection made during the past several years and add significantly to the unparalleled representation of this fauna brought together by Curator Langford as a valuable by-product of his years of collecting fossil plants from the same region. It is noteworthy that Mr. Whitfield's gift includes 19 specimens of the small horseshoe crab *Euprops* and 21 specimens of small aquatic crustaceans, all commonly regarded as rather rare fossils. As in the past, the Museum has benefited greatly from the gifts of fossil plants and contribution of time and effort by Mr. Whitfield's parents, Dr. and Mrs. R. H. Whitfield, Associates in the Division of Fossil Plants. Gifts to the collection of fossil vertebrates include a large and well-preserved *Ceratodus* tooth from the mammal-bearing Early Cretaceous Trinity sands of northern Texas from L. H. Bridwell, four Devonian fishes from New York from Alick L. Carter, and several Permian reptile and amphibian specimens collected by Dr. Everett C. Olson, Research Associate, from the University of Chicago. To the gem collection were added two beautiful pieces of East Indian jewelry, a bracelet and a necklace, gifts from Mrs. Samuella Crosby, of Chicago.

Exhibits—Geology

Thirteen exhibits (including four habitat groups) were completed during the year and installed in the new Hall of Fossil Invertebrate Animals and Fossil Plants (Hall 37, Frederick J. V. Skiff Hall), which was reopened on October 1. By using modern methods to

GOLD AND ASSOCIATED MINERALS



Three minerals commonly mistaken for gold are shown in this exhibit of native gold and gold ores, one of the fifty-four exhibits in the Hall of Economic Geology (Hall 36).

display carefully selected material of educational value, it has been possible to present to the public one of the outstanding halls of this kind in the world. The hall now contains fifty-three exhibits arranged in two sequences. On the south side of the hall twenty-three screens and ten habitat groups constitute a historical sequence of the life and geology of twelve geologic periods emphasizing 540 million years of earth-history. Twenty cases on the north side of the hall show fossil invertebrate animals and fossil plants systematically arranged by natural groups to form a biological sequence.

The success of Hall 37 is in a large measure the result of the concerted effort of all concerned in the Department of Geology and to the hearty co-operation of all other departments of the Museum. Curator Richardson, Curator of Exhibits Harry E. Changnon, and Preparators Henry Horback and Henry U. Taylor gave their undivided attention to the hall for the period of three years during

which it was being installed. They are to be congratulated for the results achieved. Many of the illustrations in color and paleogeographic maps were done by John Conrad Hansen, departmental Artist. The series of cases displaying fossil plants was prepared and installed under the direction and advice of Dr. Theodor Just, Chief Curator of Botany, in co-operation with Curator Langford. The ten restoration groups are the work of George Marchand, sculptor-artist, of Ebenezer, New York.

Installations in the Hall of Economic Geology (Hall 36) were completed during the year with the addition of two exhibits. The hall now contains fifty-four exhibits showing the minerals and ores of economic importance and their uses. The mineral and meteorite exhibits were moved from Hall 34 to Hall 35 (Clarence Buckingham Hall) and the physical-geology exhibits formerly in Hall 35 were removed from exhibition for modernization and reinstallation in a new hall of physical geology (Hall 34). No new exhibit was installed during the year by the Division of Vertebrate Paleontology, although three Permian reptile skeletons were prepared and mounted for exhibition by Chief Preparator Gilpin and Preparator Stanley Kuczek.

This habitat group in Hall 37 shows some of the typical marine animals that lived among the coral reefs on the present site of Chicago about 365 million years ago.



Department of Zoology

Research and Expeditions

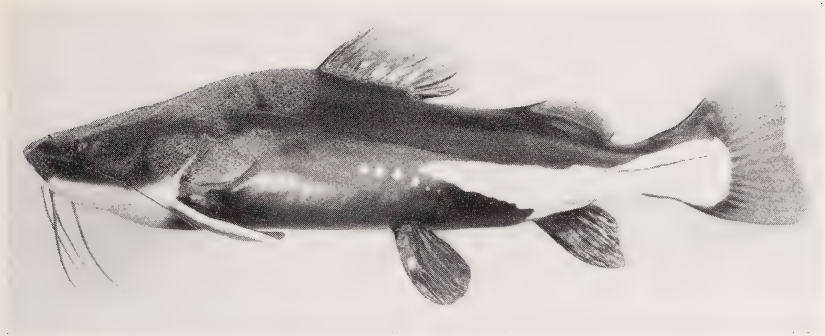
The principal research project for the year in the Division of Mammals resulted in completion by Curator Colin C. Sanborn of the report on the mammals collected by the Philippines Zoological Expedition of 1946-47. Further studies were made by Curator Sanborn of mammals from Yemen, Arabia, and from southeastern Peru and of bats from Northeast Africa. He has begun the study of a collection of rodents from Angola and has identified small collections from Siam and Bolivia for the National Museum of Siam and for the branch of the Rockefeller Foundation in La Paz, Bolivia. Philip Hershkovitz, Assistant Curator, was occupied throughout the year with his mammal survey of Colombia, which lays the foundation for further researches on the mammals of Colombia. His third year in Colombia was devoted mainly to the exploration of the Bogotá region. Although activities of revolutionary bands made certain areas inaccessible and the expedition was hampered by unfavorable weather, the collections for the year amount to more than one thousand specimens.

In the Division of Birds the principal research activities of Dr. Austin L. Rand, Curator, were devoted to his field work in El Salvador as the Museum's representative in zoology at the Tropical Institute and to the subsequent completion, with Melvin A. Traylor, Jr., Research Associate, of the manuscript for a handbook on the birds of El Salvador to be published in Spanish translation. Curator Rand was also engaged in study of a collection of birds from Nepal, in various revisionary studies of African birds, and in further researches on Philippine birds in association with D. S. Rabor, of Silliman University, Philippine Islands, visiting Guggenheim Fellow. Emmet R. Blake, Associate Curator, was occupied throughout the year with his field guide to Mexican birds, to be published by the University of Chicago Press. It should be emphasized that summaries of this nature, like that of Curator Rand for the birds of El Salvador, form a by-product of the more technical researches in museums and that their preparation is an essential service that can come only from museums and museum scientists. Research Associate Traylor, in addition to working with Curator Rand, made taxonomic studies of bird collections from Peru and Paraguay. Mrs. Ellen T. Smith, Associate, devoted much of her time to curatorial work, and her aid has been especially valuable during the year in connection

with the rearrangement of the Conover Collection. A program of collecting, mainly birds, in the rain-forest of Gabon, French Equatorial Africa, was continued for the Museum by Harry A. Beatty, of New York.

Clifford H. Pope, Curator of Amphibians and Reptiles, continued his studies of North American salamanders, completing a study of the interesting Ouachita Mountain species *Plethodon ouachitae* and extending his field work to Mexico, where July and August were spent with Charles M. Bogert, of the American Museum of Natural History, New York, and Dr. Archie F. Carr, of the University of Florida, in exploration of the Volcán Toluca on the escarpment of the Mexican plateau. Curator Pope has conferred with the staff of the School of Medicine, Northwestern University, and Lincoln Park Zoo regarding initiation of a program of study of snake venoms. He joined J. D. Romer, of Hong Kong, in the description of a new species of frog from that island. Chief Curator Karl P. Schmidt resumed his study of American coral snakes, prepared a paper on a collection of amphibians and reptiles of Iran, and continued work on a new edition of the *Checklist of North American Amphibians and Reptiles*. Stanley Rand, who accompanied his father to El Salvador, worked on his resulting collection of amphibians and reptiles during July and August for the purpose of preparing a report for publication by the Museum. A long-term interest of the Division of Reptiles, the measuring and marking of blue racers from a hibernation aggregation of this interesting local species of snake, was continued in the Indiana dunes region by Miss Laura Brodie, Assistant. This activity was begun in 1935 by Chief Curator Schmidt and has been carried on intermittently by various members of the zoology staff.

Loren P. Woods, Curator of Fishes, continued his investigations of the ecological distribution and taxonomy of the fishes of the Gulf of Mexico. Trips to the northern Gulf and to the Campeche Banks were made on the United States Fish and Wildlife Service research vessel *Oregon* at the invitation of Stewart Springer, fishery engineer. Robert F. Inger, Assistant Curator, continued his studies of the brackish and fresh-water fishes of Borneo, based on the collections of the Museum's Borneo Zoological Expedition of 1950. His collections and studies in North Borneo form a valuable supplement to our knowledge of the fishes of the vast island, whose area amounts to nearly three hundred thousand square miles. He completed his review of the Amphibia of the Philippine Islands, drawn up in comprehensive form in the hope of making it useful to the new generation of students of zoology in the Philippines. His report is based on the Philippines Zoological Expedition of 1946-47. As part of a



This model of the handsome red-tailed and shield-headed catfish of the Amazon Basin, from a specimen presented by John G. Shedd Aquarium, is shown in Hall O.

program of renewed study of cave fishes of North America, Curator Woods and Assistant Curator Inger made three field trips to southern Indiana, Illinois, and Missouri and to Kentucky, where they visited a total of twenty-four caves and fourteen springs. A checklist of the fishes of the deep sea (below 1,000 fathoms) is in preparation by Mrs. Marion Grey, Associate.

Research activities in the Division of Vertebrate Anatomy were curtailed by its transfer to new quarters. Curator D. Dwight Davis worked on the anatomy of the head of the salamander *Cryptobranchus* and on the baculum of the gorilla and, in relation to the monograph on the giant panda, continued studies of the anatomy of carnivores. Dr. R. M. Strong, in addition to his work for the Conservation Council of Chicago and management of the Illinois Audubon Society, continued study of the anatomy of the mud-puppy *Necturus*.

The most important completed research in the Division of Insects was the study of rove beetles of the group Gyrophaenae by Research Associate Charles H. Seevers. Curator Rupert L. Wenzel continued his studies of the beetles of the family Histeridae and at the end of the year was engaged in the study of types in various European museums. Associate Curator Henry S. Dybas made a study trip to several museums in the eastern states, where he examined important type-material to further his studies of the minute fungus inhabiting beetles of the family Ptiliidae. William J. Gerhard (who became Curator Emeritus on January 1 at his own request and completed in September his fiftieth consecutive year in the Division of Insects) has been occupied since his retirement chiefly with the organization of the Division's large library of pamphlets and the

transfer of the Strecker Collection of butterflies and moths to permanent drawers in the new metal cases made possible by the expansion of the Division of Insects in 1950-51. In addition, the great experience and knowledge of the Curator Emeritus are being constantly drawn upon by his fellow workers in the Division and in the Museum. Field work of the Division of Insects was limited to local trips to investigate such special habitats as tree-holes and pocket-gopher burrows, which are still quite inadequately known even in the Chicago area.

Dr. Fritz Haas, Curator of Lower Invertebrates, finished his study of the brackish and fresh-water mollusks of Bermuda based on his collections of 1947, 1948, and 1950 and completed a report on a collection of shells from the Near East made in 1950 by Dr. Henry Field, former member of the Museum staff, on his expedition for the Peabody Museum of Harvard University. Curator Haas made a study of the Unionaceae for the forthcoming "Treatise on Invertebrate Paleontology," and at the end of the year final work was under way on his monograph of the bivalves (begun long before World War II) for *Bronn's Klassen und Ordnungen des Tierreiches*, the great German work on the animal kingdom.

The routine work of the Department of Zoology operates as an essential aid to the research program as a whole. The organization of the departmental files of illustrations continued under the direction of Miss Brodie, Assistant. Miss Margaret G. Bradbury, Artist, prepared drawings for the Divisions of Reptiles and Fishes and for a paper by the Chief Curator. Mrs. Dorothy B. Foss, Osteologist, continued the work of preparing skeletons for the Division of Vertebrate Anatomy and of skulls for the Division of Mammals. Hymen Marx, Assistant, bore the load of accessioning, cataloguing, numbering, and labeling incoming material in the Division of Reptiles, and August Ziemer, Assistant, had charge of pinning and preparation in the Division of Insects.

Exhibits—Zoology

The body of Bushman, the famous gorilla of Lincoln Park Zoo, was prepared for exhibition by a combination of techniques. The face and feet were made as celluloid models by the Walters Process and these were combined with the mounted skin, the assembled whole being a combination of the skills of Taxidermists Leon L. Walters and Frank C. Wonder and Artist Joseph B. Krstolich. After temporary exhibition in Lincoln Park Zoo, Bushman was returned



This celluloid model of the spectacled cobra of southeastern Asia shown in its warning attitude is based on a specimen that was received from the Chicago Zoological Society.

to the Museum for a permanent place in the Museum's hall of African mammals (Hall 22, Carl E. Akeley Memorial Hall). No technique other than celluloid reproduction could have made the hairless face, with its translucent fleshy skin, appear so life-like, and Bushman's expression of repose and of almost arrogant indifference to his multitude of visitors has been wonderfully caught by Taxidermist Walters. The addition of the new gorilla makes possible the retirement from exhibition of three gorillas that date from the early years of the Museum and represent the style of taxidermy in vogue in the last century.

Two cases were added to the series of subjective exhibits that supplement the systematic collection of birds of the world in Boardman Conover Hall (Hall 21). The first of these shows the principles of camouflage by countershading and adaptive resemblance as well as the less evidently adaptive conspicuous colorations. The second shows noteworthy types of hybridization in birds and sets forth a

series of the remarkable natural hybrids between the blue-winged warbler and the golden-winged warbler in the eastern United States, which segregate out as Brewster's warbler and Lawrence's warbler in the second generation. Work is in progress on the synoptic series of birds of the world by Taxidermist Carl W. Cotton. Taxidermist Walters and Taxidermist Ronald J. Lambert have revised and relettered the screens of cobras and their allies and of vipers, and these exhibits have been reinstalled in Albert W. Harris Hall (Hall 18, Reptiles, Amphibians, and Insects). Revision of the screens of turtles has involved field work by Taxidermist Lambert, who is making natural ground-work bases for the specimens by a celluloid infiltration technique. A model of the red-tailed catfish of South America, prepared by Taxidermist Wonder, was placed on exhibition in the Hall of Fishes (Hall O). The species is remarkable for the bony shield that covers the head and back as well as for brilliant coloration. The specimen on which the model is based was received from the John G. Shedd Aquarium. Artist Krstolich resumed work on the exhibit for the Hall of Anatomy (Hall 19) that will answer the question "What Is a Muscle?"

Accessions—Zoology

By far the most important accession in the year for the Division of Reptiles was the gift from Mrs. Sherman C. Bishop, of Rochester, New York, and Mrs. Daniel W. O'Dell, of Ithaca, New York, of the collection of salamanders accumulated by the late Professor Bishop that formed the basis of his *Handbook of North American Salamanders*. The active study of these creatures initiated by Curator Pope makes it appropriate that the Bishop Collection should be in his charge. Because of the transfer of the Division of Reptiles to the ground floor in 1952, the collection, in its 1,500 jars, will not be unpacked until the new storage space is prepared. With this collection, thanks to the authorities of the University of Rochester, the Museum received also the university's entire collection of amphibians and reptiles, including excellent series of turtles. Other significant gifts are 52 amphibians and reptiles of Colombia from Hermano Daniel; 26 salamanders of Kentucky from Dr. Roger W. Barbour; and 72 salamanders of North Carolina from Dr. James Kezer. A share of the amphibians and reptiles collected by the Hopkins-Branner Expedition to Brazil in 1911 was acquired in exchange for the preparation of a report on the collection, which is now in the California Academy of Sciences, San Francisco.

The outstanding gift in the Division of Insects is the collection of about 10,000 rove beetles (including 24 holotypes and 1,800 paratypes of 33 species) that formed the basis for the paper by Research Associate Seevers on the Gyrophaenae published this year by the Museum. A notable purchase is the Eugene Ray Collection of mordellid beetles, which adds to the collections another broadly representative world-wide family unit consisting of about 6,000 specimens, with 13 holotypes and some 200 paratypes. The collections of this family available in the Museum include the Liljeblad Collection on long-term loan from the Museum of Zoology

Bushman, famous gorilla of Lincoln Park Zoo, is now on exhibition at the Museum.



of the University of Michigan. The major accession of the year and one of the most important acquisitions in the history of the Division of Insects is the Bernhauer Collection of Staphylinidae, including library and correspondence, which was purchased from an heir in Vienna, Austria, but had not yet arrived at the end of the year. A preliminary examination of the collection in Vienna by Curator Wenzel indicates that types of from 4,000 to 5,000 species of Staphylinidae are represented in the collection of perhaps 100,000 specimens, but a more detailed inventory must await the arrival of the collection at the Museum. Packing and shipping of insects is always a special problem because of the delicate nature of the material. The Bernhauer Collection, because of its location in a distant country (Vienna is surrounded by a Soviet Zone), posed an especially exacting problem. Curator Wenzel devoted more than a month before his type-study project in European museums to the arduous and intricate preparations involved in transferring this unique scientific material to this Museum, where it will be integrated with the Museum's other important collections of beetles.

The acquisition by purchase of the collection of fishes of Carnegie Museum, Pittsburgh, represents the most important single accession in the history of the Division of Fishes. This collection, of approximately 40,000 specimens, comprises more than 11,000 lots of fishes, including the famous South American material gathered by Dr. Carl H. Eigenmann and his students, several large collections from Japanese waters, and many smaller series from areas until now unrepresented in the Museum. The collection more than doubles the number of type specimens of fishes in the Museum and adds a large number of genera and families hitherto not available to the staff. It is anticipated that students from other institutions as well as the staff of this Museum will benefit by having this extremely important material made available for study.

Gifts of outstanding importance in the Division of Lower Invertebrates came from Peabody Museum, Harvard University, and Leslie Hubricht, of Danville, Virginia. Exchange relations for mollusks were maintained with the United States National Museum, Washington, D.C., by which paratypes are acquired by both institutions. Generous gifts of shells, fishes, mammals, birds, reptiles, and amphibians of Yemen collected by Field Associate Harry Hoogstraal represent in the Museum collections for the first time this little-known corner of Arabia. The body of the gorilla Bushman, who died at Lincoln Park Zoo on New Year's Day, 1951, was received by the Museum and formed the basis of the reproduction for permanent exhibition by the Museum's taxidermy staff.

LIBRARY OF THE MUSEUM

Any library bears the marks of the individuals who have contributed to its growth, and this is especially true of the Library of Chicago Natural History Museum. Throughout the years the Library has participated in the generous gifts made to the Museum by those having its welfare at heart. Represented among the holdings in the four major divisions of the Library are contributions consisting of individual volumes, complete sets of works covering special fields, and entire private collections. This past year the Library has again been the fortunate recipient of another generous gift—the large personal collection of ornithological books and periodicals bequeathed to it by the late Boardman Conover, Trustee of the Museum and Research Associate in the Division of Birds. (For names of all donors in 1951, see page 100.)

In accordance with the traditional policy of building up the Library's collection by a highly selective process, the year has been characterized by important acquisitions to meet the expanding needs in research of the staff and of scholars who depend upon the Library's resources. The addition of 1,956 volumes represents both books and serials. This aggregation includes publications covering the newer branches of scientific endeavor in the four major divisions of the Museum's field of interest as well as rare and difficult-to-obtain desiderata. The following selections are some of the long-wanted items that recently have been acquired:

BOOKS

- Bernardi, A. C., *Monographie du genre Conus* (1861)
- Bordas, Léonard, *Recherches sur les organes reproducteurs mâles des coléoptères (anatomie comparée, histologie, matière fécondante)* (1900)
- Bourguignat, Jules René, *Aperçu sur les Unionidae de la péninsule italique* (1883)
- , *Histoire des Mélaniens du système Européen* (1884)
- , *Histoire malacologique du Lac Tanganika (Afrique équatoriale)* (1890)
- , *Mélanidies du Lac Nyassa suivies d'un aperçu comparatif sur la faune malacologique de ce lac avec celle du grand Lac Tanganika* (1889)
- Buitenzorg, Java. 's Lands plantentium, *Icones borgorienses*, 4 v. (1897–1914)
- Candolle, Augustin Pyramus de, *Théorie élémentaire de la botanique, ou Exposition des principes de la classification naturelle et de l'art de décrire et d'étudier les végétaux*, 2nd ed. (1819)
- Casey, Thomas Lincoln, *Contributions to the descriptive and systematic coleopterology of North America*, 2 pts. (1884–85)
- Clercq, Frederik Sigismund Alexander de, *Nieuw plantkundig woordenboek voor Nederlandsch Indië* (1927)
- De Geer, Charles, *Mémoires pour servir à l'histoire des insectes*, 7 v. (1752–78)
- Devold, J., and P. F. Scholander, *Flowering plants and ferns of southeast Greenland* (1933)

BOOKS (continued)

- Fabricius, Johann Christian, *Epitome Entomologiae Fabricianae, sive Nomenclator Entomologicus emendatus, sistens Fabriciani Systematis cum Linneano comparationem* (1797)
- Ganglbauer, Ludwig, *Die Käfer von Mitteleuropa*, Bd. 1-4 (1892-1904)
- Hagelstein, Robert, *The Mycetozoa of North America* (1944)
- Harcourt, Raoul d', and Marguerite (Béclaid) d' Harcourt, *La musique des Incas et ses survivances* (1925)
- Hawks, Ellison, *Pioneers of plant study* (1928)
- Hegi, Gustav, *Illustrierte flora von Mitteleuropa*, Bd. 1-2, 2 aufl. (1936-39)
- Herzog, Theodor, *Geographie der Moose* (1926)
- Holandre, Jean Joseph Jacques, *Faune du département de la Moselle* (1836)
- Holder, Charles Frederick, *Living lights, a popular account of phosphorescent animals and vegetables* (1887)
- Kerner, Anton Joseph, Ritter von Marilaun, *Pflanzenleben*, 3 aufl. neubearb., 3 v. (1913-16)
- Kerner, Anton Joseph, Ritter von Marilaun, and Francis Wall Oliver, *The natural history of plants, their forms, growth, reproduction, and distribution*, 2 v. (1902)
- Kobelt, Wilhelm, *Studien zur zoogeographie*, 2 v. (1897-98)
- Kudo, Yushun, *Taxonomy of Japanese useful trees and shrubs (Nihon yuyo jumoku bunruigaku)* (1943)
- Linné, Carl von, *Caroli Linnaei Entomologia, faunae suecicae descriptionibus aucta*, 4 v. (1789)
- Lister, Arthur, *A monograph of the Mycetozoa, a descriptive catalog of the species in the Herbarium of the British Museum* (1925)
- Lucas, H., *Entomologie de l'expédition de Castelnau dans les parties centres de l'Amerique du Sud* (1843-47)
- Mellis, John Charles, *St. Helena: a physical, historical and topographical description of the island, including its geology, fauna, flora and meteorology* (1875)
- Miller, William, *A dictionary of English names of plants applied in England and among English-speaking people to cultivated and wild plants, trees and shrubs* (1884)
- Mousson, Joseph Rudolph Albert, *Révision de la faune malacologique des Canaries* (1873)
- Oviedo y Valdés, Gonzalo Fernández de, *Historia general y natural de las Indias, islas y tierra firme del mar océano*, 14 v. (1844-45)
- Pabst, G., ed., *Koehler's medizinal-Pflanzen in naturgetreuen abbildungen mit kurz erläuterndem Texte*, 4 v. (1883?-1914?)
- Rondani, Camillo, *Dipterologiae italicae, facsimili ed.*, 8 v. (1856-80)
- Rossi, Pietro, *Fauna Etrusca, sistens insecta quae in provinciis Florentina et Pisana praesertim collegit Petrus Rossius*, 2 v. (1790)
- Scott, Dukinfield Henry, *Studies in fossil botany*, 3rd ed. (1920-23)
- Sim, Thomas Robertson, *The ferns of South Africa*, 2nd ed. (1915)
- Sowerby, James, *English botany*, 13 v. (1863-1902)
- Thunberg, Karl Peter, *Dissertatio entomologica novas insectorum species, sistens insecta suecica*, 9 pts. (1781-91)
- , *Dissertatio entomologica sistens insecta suecica*, 7 pts. (1784-95)
- Tierwelt Deutschlands und der angrenzenden Meeresteile nach ihren Merkmalen und nach ihrer Lebensweise*, 40 pts. (1925-42)
- Tierwelt Mitteleuropas. Insecta*, Bd. 4-6 (n.d.)
- Walker, Francis, *Insecta Britannica. Diptera*, v. 1-3 (1851-56)
- Watson, H. C., *Compendium of the Cybele Britannica*, 3 v. (1868-70)
- Zahlbruckner, Alexander, *Catalogus lichenum universalis*, 10 v. (1922-40)

SERIALS

- Abeille; journal d'entomologie* (Société Entomologique de France), v. 1-10 (1864-73)
- Acta phytotaxonomica et geobotanica* (Societas Phytogeographia), v. 3-14 (1933-50)
- Anatomical record*, v. 52-108 (1932-50)
- Anatomische nachrichten; amtliches organ der Anatomischen Gesellschaft*, v. 1— (1949—)
- Annals of botany*, n.s., v. 9— (1945—)
- Deutsche Geologische Gesellschaft, Berlin. *Zeitschrift*, v. 4-16, 18-22, 25-39 (1851-89)
- Index of fungi*, v. 1— (1940—)
- Konowia: Beiträge zur systematischen Insektenkunde*, v. 1— (1922—)
- Linnaea entomologica*. Zeitschrift hrsg. von dem Entomologischen Vereine in Stettin, v. 1-15 (1846-63)
- Magazin der entomologie*. Hrsg. von Dr. E. F. Germar, 4 v. (1813-21)
- Magazin für Insektenkunde*. Hrsg. von Karl Illiger, v. 1-5 (1802-06)
- Münchener Koleopterologische Zeitschrift*. Organ für allgemeine Systematik der Koleopteren und für die Kolepteren-fauna der Paläarktischen Region, 3 v. (1902-08)
- Naturwissenschaften, Die*, v. 23-37 (1935-50)
- Petites nouvelles entomologiques*, v. 1-2, nos. 1-216 (1869-March 1879)
- Præhistorische zeitschrift*, v. 1-4 (1902-12)
- Revue Suisse de Zoologie*. Annales de la Société Naturelle de Genève. v. 1-53 (1893-1946)
- Società Entomologica Italiana, Florence. *Memorie*, v. 1-9, 11-12 (1922-34)
- Société Fouad ler d'Entomologie, Cairo, *Bulletin*, v. 1-9, 11-12, 14-21, 24-29 (1908-45)
- Suomen Hyönteistiellinen aikakauskirja* (Annales Entomologici Fennici) v. 1-10 (1935-44)
- Wiener Entomologen Verein, Vienna. *Zeitschrift*, v. 1-27 (1916-42)

One of the major current activities of the Library, the reclassification of its collection according to the Library of Congress classification, long retarded by the lack of an adequate cataloguing staff, made unusual progress during 1951 because of the assignment in March of a special separate project to each of the three classifiers. The outstanding progress made in classification this year is due primarily to the organizing ability of the Librarian, Mrs. Meta P. Howell, who has inspired her group of loyal and capable assistants to exert their best efforts in attaining the results noted. The fine co-operation of the Library staff with the members of our own scientific staff and with visitors interested in using the facilities of our Library is a matter in which the Museum takes keen pride.

During the period from December, 1950, through November, 1951, a total number of 7,267 volumes were classified under the Library of Congress classification. Of this number, 5,509 covered reclassified material and 1,758 new publications. The number of

cards filed during the year in the author, title, and subject catalogue totaled 18,568. The complete report of volumes classified under Library of Congress classification to November 30, 1951, numbers 30,724, with a total of 63,329 cards covering author, title, and subject entries. Approximately 750 volumes were sent to the bindery, including new and reclassified material. Weeding-out of material not directly related to the Museum's needs or falling within the scope of its activities has continued to provide valuable stack space for new acquisitions, including important serial publications of scientific societies and research organizations.

Although interlibrary-loan service has long been an important function of the Library, the service continues to expand to include more allied institutions. A library is as essential to research as are modern equipment and methods, and yet libraries cannot hope to acquire all the vast amount of scientific research data now being published throughout the world. Thus the exchange of material through the co-operative system of interlibrary loan provides satisfactory distribution of data needed for research. The courtesy and co-operation of all libraries participating in this valuable endeavor is profoundly appreciated by the Museum Library. The exchange of both domestic and foreign publications has also expanded, and the Library now has an active file of 1,855 publications received in exchange. Revision of the exchange files is a daily procedure and, although some foreign files still are incomplete for the war years, the vast amount of correspondence outstanding should bring results in filling these gaps. In addition, the Library subscribes for 277 scientific journals. The number of research publications received regularly, both in exchange and through subscription, totals 2,132, 87 per cent of which number is received through exchange.

MOTION PICTURES

The Museum film, "Through These Doors," has been used widely throughout the Middle West and occasionally in distant cities to tell the story of what the Museum is doing. Miss Harriet Smith, of the James Nelson and Anna Louise Raymond Foundation, left the Museum in September to make an extended tour with the film under the direction of the International Film Bureau of Chicago. She will return to the Museum in February, 1952. Work in the Division of Motion Pictures, in addition to the normal care of our films, consisted largely in producing short-subject films for the use of the Raymond Foundation.

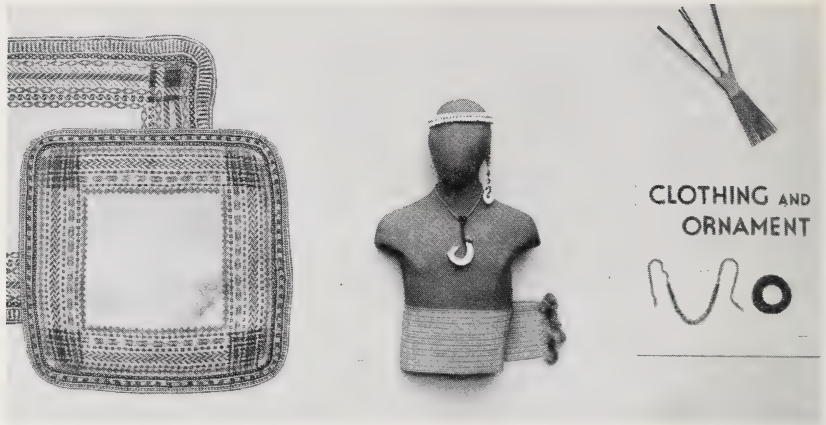
PHOTOGRAPHY AND ILLUSTRATION

Douglas E. Tibbitts, Staff Illustrator, finished during the year more than 350 separate pieces of miscellaneous art work for the departments and divisions of the Museum. Major projects, of which sixteen remained in progress at the end of the year, included illustrations for two series of Museum Stories for Children and for future publications such as "The Orchids of Guatemala" and "Guide to the Birds of Mexico," semidiagrammatic floor plans for the Museum guide, drawings of the dentition of early Cretaceous mammals, and charts of diggings at a site of early culture in South America. The Division of Photography made during the year a total of 9,670 negatives, prints, enlargements, and lantern slides. More than 108,000 negatives are now in the photography files.

PUBLIC RELATIONS

From the standpoint of publicity the most important events of the year at the Museum were the opening of Frederick J. V. Skiff Hall (Hall 37) with its new series of spectacular exhibits of fossil invertebrate animals and fossil plants and the acquisition for permanent exhibition of the gorilla Bushman of Lincoln Park Zoo after his death on New Year's Day. The press also gave generous amounts of space and impressive layouts of pictures and stories to the annual exhibit of nature photography sponsored by the Nature Camera Club of Chicago and the Museum, the special exhibit of the work of amateur jewelry craftsmen held at the Museum by the Chicago Lapidary Club, and other events.

Stories released directly to the press by the Public Relations Counsel totaled 258. Many of them were accompanied by photographs made by the Museum's staff photographer, while others attracted the attention of editors who assigned their own reporters and photographers to give more extensive coverage. As usual, publicity was augmented by issuing to newspapers advance proofs of the more important stories published in the Museum *Bulletin* and by a variety of other means customarily employed in public relations work. The Museum is pleased to make special acknowledgment to the publishers, executives, and editorial staffs of the *Chicago Herald-American*, *Chicago Tribune*, *Chicago Sun-Times*, *Chicago Daily News*, Associated Press, Acme News Pictures, International News Service, United Press Association, Science Service, and International News Photos. For its important assistance in



A special exhibit, "Peoples of the U. S. Trust Territory and Guam," included a loan collection from Honolulu Academy of Arts and objects from the Museum collections.

the transmission on frequent occasions of urgent news matter to the Chicago newspaper offices by its pneumatic tubes, special thanks are given to the City News Bureau of Chicago. Additional publicity, obtained through the co-operation of radio and television stations and networks, reached audiences on news broadcasting programs, feature programs, and educational forums. Among the radio stations and networks that contributed time to the Museum were WGN, WGN-TV, WMAQ, WIND, WBBM, WENR, WLS, WJJD, National Broadcasting Company, Mutual Broadcasting System, American Broadcasting Company, and Columbia Broadcasting System.

The Museum *Bulletin* was published and distributed regularly each month. This organ, which maintains monthly contact between the Museum and its several thousand Members, serves as a publication for exchange with scientific and civic institutions and also for carrying information about the Museum to the press. Travel bureaus, department stores, civic agencies of many types, and the other museums of Chicago assisted in the distribution of many thousands of folders planned particularly to attract tourists in Chicago to visit the Museum. Posters advertising the Museum's two lecture courses for adults and the Raymond Foundation's three series of programs for children were placed on station platforms and in passenger coaches through the co-operation of the Chicago and North Western Railway, the Illinois Central System, the Chicago, Aurora and Elgin Railroad, and the Chicago Transit Authority.

PUBLICATIONS AND PRINTING

In accordance with the Museum's custom, a large part of the distribution of its scientific publications during the year was made without charge to the institutions and scientists in forty-seven states and seventy foreign countries with which the Museum has exchange relations. Forty-seven new exchanges were established. A total of 22,551 copies of scientific papers was distributed in exchange, while sales included 4,603 copies in the scientific series, 7,900 copies in the popular series, and 28,549 copies of miscellaneous publications, most of which were copies of the *General Guide* to the Museum's exhibits (see page 89). It is of interest that twenty-one colleges and universities used the Museum's popular-series booklet *Prehistoric Men* as a supplementary text in 1951. For future distribution 22,700 copies of publications were wrapped and stored.

The Museum printed during the year twenty-nine publications in its scientific series, four (three reprints) in its popular series, one annual report, and nine indexes to volumes. The total number of copies printed was 52,546, of which 50,696 copies were printed by letterpress, with a total of 1,720 pages of type composition, and 1,850 copies were printed by the Vari-type-offset process, with a total of 360 pages of Vari-type composition. Twelve numbers of Chicago Natural History Museum *Bulletin* were printed, averaging 6,000 copies an issue. Other work by letterpress included posters, price lists, lecture schedules, Museum labels, post cards, Museum stationery, and specimen tags, totaling 715,606 impressions. Two series of Museum Stories for Children and miscellaneous work by the Vari-type-offset process totaled 229,596 impressions.

Publications printed in 1951 by the Division of Printing of Chicago Natural History Museum are:

DEPARTMENT OF ANTHROPOLOGY

BRAIDWOOD, ROBERT J.

Prehistoric Men, Popular Series, Anthropology, no. 37, 122 pages, 28 illustrations (reprint)

LEWIS, ALBERT B.

People of the South Pacific, Handbooks, Anthropology, 259 pages, 60 illustrations (reprint)

MARTIN, RICHARD A.

Mummies, Popular Series, Anthropology, no. 36, 18 pages, 20 illustrations (reprint)

QUIMBY, GEORGE I.

The Medora Site, West Baton Rouge Parish, Louisiana, Anthropological Series, vol. 24, no. 2, 59 pages, 21 illustrations

DEPARTMENT OF ANTHROPOLOGY (*continued*)

QUIMBY, GEORGE I., AND ALEXANDER SPOEHR

Acculturation and Material Culture—I, Fieldiana: Anthropology, vol. 36, no. 6, 41 pages, 29 illustrations

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

Contributions to the Flora of South America: Studies on Andean Compositae—II, Studies in South American Plants—III, Fieldiana: Botany, vol. 27, no. 2, 113 pages, 7 illustrations

MACBRIDE, J. FRANCIS

Flora of Peru, Botanical Series, vol. 13, part 3A, no. 1, 290 pages

STEYERMARK, JULIAN A., AND COLLABORATORS

Contributions to the Flora of Venezuela, Fieldiana: Botany, vol. 28, no. 1, 242 pages, 42 illustrations

DEPARTMENT OF GEOLOGY

DENISON, ROBERT H.

Evolution and Classification of the Osteostraci and The Exoskeleton of Early Osteostraci, Fieldiana: Geology, vol. 11, nos. 3 and 4, 64 pages, 18 illustrations
Late Devonian Fresh-Water Fishes from the Western United States, Fieldiana: Geology, vol. 11, no. 5, 43 pages 12 illustrations

HOOIJER, DIRK A., AND EDWIN H. COLBERT

A Mastodont Tooth from Szechwan, China, Fieldiana: Geology, vol. 10, no. 12, 6 pages, 2 illustrations

OLSON, EVERETT CLAIRE

Diplocaulus, A Study in Growth and Variation, Fieldiana: Geology, vol. 11, no. 2, 115 pages, 18 illustrations
Fauna of Upper Vale and Choza: 1-5, Fieldiana: Geology, vol. 10, no. 11, 40 pages, 16 illustrations

ROY, SHARAT KUMAR, AND ROBERT KRISS WYANT

The Benld Meteorite, Geological Series, vol. 7, no. 11, 13 pages 13 illustrations

DEPARTMENT OF ZOOLOGY

DAVIS, D. DWIGHT

The Baculum of the Gorilla, Fieldiana: Zoology, vol. 31, no. 54, 3 pages, 1 illustration

HAAS, FRITZ

Non-Marine Shells from Borneo Collected by the Borneo Zoological Expedition, 1950, Fieldiana: Zoology, vol. 31, no. 52, 6 pages, 3 illustrations
Remarks on and Descriptions of South American Non-Marine Shells, Fieldiana: Zoology, vol. 31, no. 46, 43 pages, 30 illustrations

HAAS, GEORG

On the Clausiliidae of Palestine, Fieldiana: Zoology, vol. 31, no. 45, 24 pages, 8 illustrations

DEPARTMENT OF ZOOLOGY (continued)

HERSHKOVITZ, PHILIP

Mammals from British Honduras, Mexico, Jamaica and Haiti, Fieldiana: Zoology, vol. 31, no. 47, 23 pages, 1 map

HOOGSTRAAL, HARRY

Philippine Zoological Expedition, 1946-1947, Narrative and Itinerary, Fieldiana: Zoology, vol. 33, no. 1, 93 pages, 14 illustrations

MERTENS, ROBERT

A New Lizard of the Genus Varanus from New Guinea, Fieldiana: Zoology, vol. 31, no. 43, 5 pages, 1 illustration

POPE, CLIFFORD H., AND J. D. ROMER

A New Ranid Frog (Staurois) from the Colony of Hongkong, Fieldiana: Zoology, vol. 31, no. 50, 4 pages, 2 illustrations

RAND, AUSTIN L.

Birds from Liberia, with a Discussion of Barriers between Upper and Lower Guinea Subspecies, Fieldiana: Zoology, vol. 32, no. 9, 96 pages, 1 map

Birds of Negros Island, Fieldiana: Zoology, vol. 31, no. 48, 26 pages

Review of the Subspecies of the Sunbird, Fieldiana: Zoology, vol. 31, no. 49, 11 pages, 1 map

SANBORN, COLIN CAMPBELL

Two New Mammals from Southern Peru, Fieldiana: Zoology, vol. 31, no. 44, 5 pages, 2 illustrations

SCHMIDT, KARL P.

The Truth about Snake Stories, Popular Series, Zoology, no. 10, 23 pages, 9 illustrations

SCHMIDT, KARL P., AND ROBERT F. INGER

Amphibians and Reptiles of the Hopkins-Branner Expedition to Brazil, Fieldiana: Zoology, vol. 31, no. 42, 27 pages, 1 illustration

SEEVERS, CHARLES H.

A Revision of the North American and European Staphylinid Beetles of the Subtribe Gyrophaenae, Fieldiana: Zoology, vol. 32, no. 10, 105 pages, 26 illustrations

STORY, H. ELIZABETH

The Carotid Arteries in the Procyonidae, Fieldiana: Zoology, vol. 32, no. 8, 82 pages, 17 illustrations

TRAYLOR, MELVIN A., JR.

A Review of the Woodpeckers Chrysoptilus melanochloros and C. melanolaimus, Fieldiana: Zoology, vol. 31, no. 41, 17 pages, 1 illustration

Notes on Some Peruvian Birds, Fieldiana: Zoology, vol. 31, no. 51, 9 pages

WOODS, LOREN P., AND ROBERT H. KANAZAWA

New Species and New Records of Fishes from Bermuda, Fieldiana: Zoology, vol. 31, no. 53, 16 pages, 4 illustrations

ADMINISTRATIVE PUBLICATIONS

Report of the Director to the Board of Trustees for the Year 1950, 142 pages, 24 illustrations

CO-OPERATION WITH OTHER INSTITUTIONS

The research collections and laboratories of the Museum were open to scientists, as in past years, and through interlibrary loan the resources of its Library were available to other institutions. Twelve young men and women were employed in 1951 by the Museum in its scientific departments under the co-operative educational plan adopted in 1946 by the Museum and Antioch College, Yellow Springs, Ohio. The Museum continued its co-operative educational relations with the University of Chicago, Northwestern University, and the School of the Art Institute of Chicago.

The Museum exhibits are used constantly by art students who seek authentic materials for their sketches, models, and designs. The School of the Art Institute of Chicago sends the greatest number of students to the Museum, and selected results of their work form a special exhibit in Stanley Field Hall of the Museum for one month in the summer. Other art schools that use the Museum exhibits are Academy of Applied Arts, Chicago Academy of Fine Arts, and Institute of Design. Adult visitors in increasing numbers also use the Museum exhibits. These visitors range from officers in the Quartermaster Corps of the United States Army to students training to be teachers, who come from Ball State Teachers College, De Paul University, National College of Education, Pestalozzi-Froebel Teachers College, and Roosevelt College.

Members of the staff continued to conduct classes at the Museum and to lecture before classes and seminars at several universities. Advanced courses in archaeology were held at the Museum for the University of Chicago by Dr. Paul S. Martin, Chief Curator of Anthropology, Donald Collier, Curator of South American Ethnology and Archaeology, and George I. Quimby, Curator of Exhibits. Dr. Alexander Spoehr, Curator of Oceanic Ethnology, gave a graduate course at the University of Chicago in the ethnology of Oceania and took part in a series of lectures on New World ethnology. Dr. Theodor Just, Chief Curator of Botany, who was appointed to the faculty of the University of Chicago, lectured at the University of Chicago and, during the fall quarter, conducted a seminar at Northwestern University on speciation. The advanced course in vertebrate paleontology of the University of Chicago again was held at the Museum, with Bryan Patterson, Curator of Fossil Mammals, Dr. Rainer Zangerl, Curator of Fossil Reptiles, Dr. Robert H. Denison, Curator of Fossil Fishes, and D. Dwight Davis, Curator of Vertebrate Anatomy, participating in the program of lectures and laboratory work. Loren P. Woods, Curator of Fishes, lectured at the Gulf



Karl Kettner, one of the student assistants at the Museum from Antioch College, is shown here preparing a fish skeleton in the new laboratory of the Division of Fishes.

Coast Research Laboratory of the University of Mississippi and before the seminar in zoogeography at the University of Illinois. As in other years classes in botany from the University of Chicago, University of Illinois, Roosevelt College, and Valparaiso University were taken on tours of the Museum's herbaria.

A number of students carried on graduate or special study at the Museum under the supervision of staff members. Graduate students from the University of Chicago were Roger Grange, George Talbot, and Howard Winters, with Chief Curator Martin and Dr. John B. Rinaldo, Assistant Curator of Archaeology; Lawrence Kaplan, with Dr. Hugh C. Cutler, Curator of Economic Botany; John W. Thieret (Chicago Natural History Museum Fellow), with Chief Curator Just; Gordon Johnson, with Dr. Everett C. Olson, Research Associate in Fossil Vertebrates; Robert F. Inger, Walter T. Stille, and Gordon Thurow, with Karl P. Schmidt, Chief Curator of Zoology; William J. Beecher, with Curator Davis; and Harry Nelson and Ronald Ward, with Alfred E. Emerson, Research

Associate in Insects. Chester Hansen, graduate student at Northwestern University, is preparing his thesis under the direction of Chief Curator Just.

Scientists from other institutions continued to use the research collections and laboratories of the Museum. Dr. Karin Hissink, of Frobenius Institute and Museum for Ethnology, Frankfurt-am-Main, Germany, visited the Museum to obtain information on museum techniques, organization, and current research. Dr. F. A. Kuttner, who is writing a book on the history of Chinese music, made a study, with the help of special electronic equipment, of the pitch and overtone characteristics of ancient Chinese jade gongs in the Museum's collection. Dr. Cesar Cisneros, director of the Institute of Anthropology and Geography, Quito, Ecuador, spent several days studying the anthropological exhibits and collections and conferring with the staff of the Department of Anthropology on methods of research. John C. Ewers, of the United States National Museum, examined the Blackfoot Indian collection; Dr. Erna Gunther, director of Washington State Museum, the Northwest Coast Indian collection; Dr. David French, of Reed College, the Wasco Indian materials; and Ray Thompson, who is making a study of modern Maya ceramics for the Carnegie Institution, the collection of recent pottery from Yucatan. Junius Bird and Miss Joy Mahler, of the American Museum of Natural History, spent ten days photographing textiles of the Eastern Woodlands Indians and ancient pottery and textiles from Nazca, Peru, and conferred with Dr. Hugh C. Cutler, Curator of Economic Botany, who is analyzing the plant material excavated by Mr. Bird at Huaca Prieta, Peru, the site of the earliest-known Indian farmers in South America. Dr. Moreau Maxwell, of Beloit College, and Robert Burgh conferred with the staff and made use of the collection of anthropological photographs and publications in connection with research projects of the Arctic-Desert-Tropic Information Center of the United States Army Air Force. Robert B. Fox, of the Philippine National Museum, spent several weeks going over the field notes of Dr. William Jones, who was killed in 1909 by Ilongot tribesmen while on a Museum expedition to study this group.

E. D. Hester, for a long time economic advisor to the High Commissioner of the Philippine Islands and now research associate in the department of anthropology of the University of Chicago, has carried on important investigations in the Department of Anthropology of the Museum. His studies have been devoted to a re-examination of the Chinese pottery that he collected in the Philippine Islands and generously lent to the Museum and a thorough



Enthusiastic junior nature-students learn about the bongo from their group leader.

analysis of the Museum's extensive ethnological research collections from the Philippines. Further, Mr. Hester has been of great aid in questions concerning Malayan ethnology, in which he is an expert. The Museum continued its co-operation with Dr. Willard F. Libby, of the Institute for Nuclear Studies, University of Chicago, in his research on carbon-14 dating by furnishing selected samples of vegetal material from Tularosa Cave, New Mexico, and, in order to check a discrepancy in dates previously obtained for two Early Nazca wood samples from the Museum's Peruvian collection, a sample of textile from an Early Nazca grave.

Visiting botanists who consulted with the staff of the Department of Botany or used the Museum's botanical collections and laboratories include: A. R. Roos, M.D., Los Angeles; Colin Marshall, British Colonial Forest Service; Miss Jeanette Kryn, Richard D. Scott, and Dr. Rogers McVaugh, University of Michigan; Dr. Norman C. Fassett and Mason E. Hale, University of Wisconsin; Dr. Adolph Meyer-Abich, Instituto Tropical de Investigaciones Cientificas, Universidad Autonoma, El Salvador; Dr. E. Lucy Braun, Cincinnati; Dr. Harlan P. Banks, Cornell University; Dr. Fred

Barkley, Chicago; Dr. Donovan S. Correll, Bureau of Plant Industry Station, Beltsville, Maryland; Dr. Dwight Moore, University of Arkansas; Dr. C. V. Morton, United States National Museum; Dr. David D. Keck, New York Botanical Garden; Dr. Lyman Benson, Pomona College; Dr. Hermann Silva, Michigan State College; Dr. William Bridge Cooke, Dr. George W. Fischer, and Dr. Charles G. Shaw, State College of Washington; Dr. F. R. Fosberg, Catholic University of America; Sister M. Cecelia Bodman, Mundelein College; Rodrigo G. Orellana, Quito, Ecuador; Dr. Maxwell S. Doty, University of Hawaii; Miss Martha Thurlow, Enoch Pratt Library, Baltimore; Dr. Bolton Davidheiser, Westmont College; Dr. Stanley R. Ames, University of Rochester; Dr. Max E. Britton, Northwestern University; Donald F. Chapp and Dr. Paul D. Voth, University of Chicago; and Dr. George A. Zentmyer, Jr., University of California. Dr. Roland W. Brown, paleobotanist, United States National Museum, examined the Upper Cretaceous and Lower Eocene plants collected during the year by the staff of the Department of Geology.

Scientists who continued important studies in the Department of Zoology were Dr. Walter C. Brown, Northwestern University; Dr. E. L. Du Brul, College of Dentistry, University of Illinois; Dr. Nicholas Hotton III, University of Kansas; Dr. Waldemar Meister, Chicago College of Osteopathy; and Dr. Edward M. Nelson, Strich School of Medicine, Loyola University. Dr. M. B. Troutman, of Franz Theodore Stone Institute of Hydrobiology, Put-in-Bay, Ohio, examined fishes of Ohio in the collections and was able to confirm records of species now extinct in the state. R. M. Darnell, whose extensive collection of fishes of Mexico is deposited in our collections, began extensive research on material from northwestern Mexico. Dr. José Herrera, of Santiago, Chile, spent four days in the study of Chilean butterflies, and Mrs. Katherine V. W. Palmer, of Cornell University, worked on the paratypes of mollusks in the Carpenter Collection, a part of the Webb Collection purchased by the Museum some years ago. The anatomy collections were consulted by W. B. Quay and P. S. Humphrey, of the University of Michigan; H. A. Ogren, of Montana State University; and Dr. C. C. Cheng, of Yenching University, Peking, China. D. S. Rabor, of Silliman University, first Guggenheim Fellow in zoology from the Philippines to study in the United States, prepared during his stay at the Museum comprehensive accounts of the vertebrates of Negros Island (on which Silliman University is located), in addition to several research papers. Leon R. Aboulafia, visiting fellow from the Biological Institute, Tel Aviv, Israel, studied museum techniques.

Under the agreement between this Museum and the Instituto Tropical de Investigaciones Cientificas of the Universidad Autonoma of El Salvador for co-operation in field work and scientific research (see 1950 Report, page 73), now known as the Salvadorean Project, Dr. Norman C. Fassett, of the University of Wisconsin, Dr. Sharat K. Roy, Chief Curator of Geology, and Dr. Austin L. Rand, Curator of Birds, were sent to El Salvador by the Museum as its representatives in botany, geology, and zoology (see pages 29, 39, 47, and 55). The Museum thanks Dr. Carlos Llerena and Dr. Aristedes Palacios, directors of the Tropical Institute, and Dr. Adolph Meyer-Abich, technical director, for their kind helpfulness and Dr. Helmut Meyer-Abich, government geologist, for generous assistance in the field.

ACTIVITIES OF STAFF MEMBERS IN SCIENTIFIC SOCIETIES

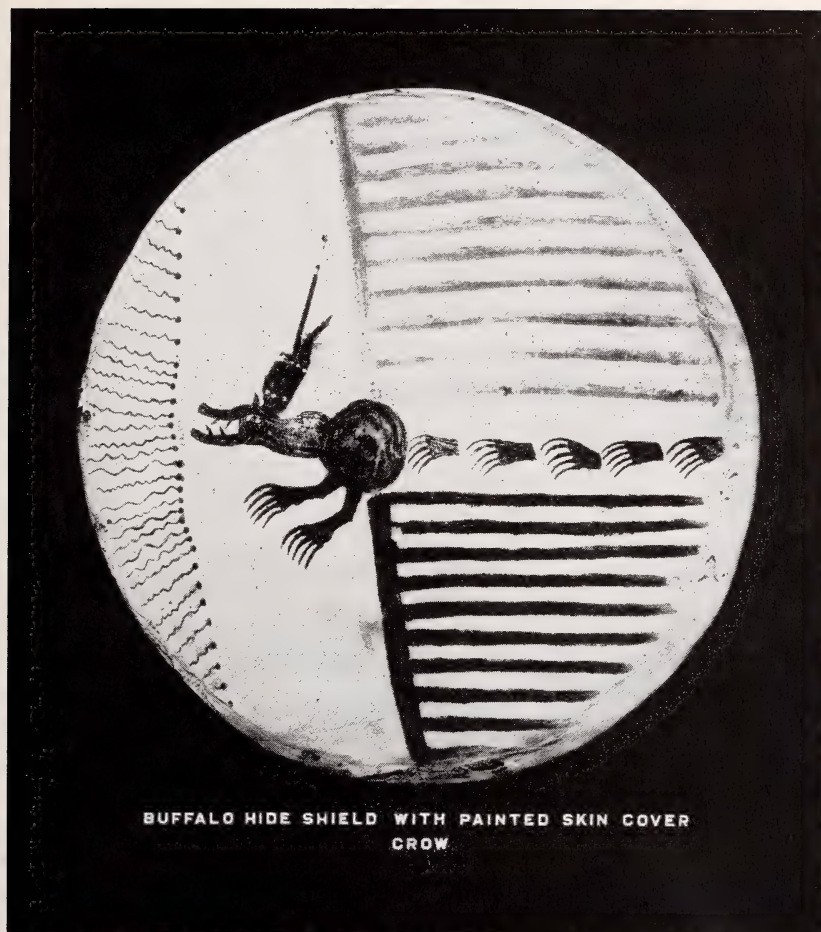
Dr. Paul S. Martin, Chief Curator of Anthropology, and members of the staff of the Department of Anthropology attended the annual meetings of the Society for American Archaeology and the Central States Branch of the American Anthropological Association at Northwestern University, Evanston, Illinois. The same staff members attended the fiftieth-anniversary meetings of the American Anthropological Association in Chicago, for which Dr. Alexander Spoehr, Curator of Oceanic Ethnology, was chairman of the program committee, Donald Collier, Curator of South American Ethnology and Archaeology, chairman of local arrangements, and George I. Quimby, Curator of Exhibits, representative of the Society for American Archaeology. Curator Spoehr, who is chairman of the newly formed subcommittee on Pacific archaeology of the National Research Council, attended a special conference on coral atoll ecological research called in Washington, D.C., by the Pacific Science Board of the National Research Council and, later, two meetings of the advisory committee for the Board's program of ecological research on the coral atolls of the Pacific to plan field work. Curator Collier is representative of the American Anthropological Association to the National Research Council, member of the executive committee of the Division of Anthropology and Psychology of the National Research Council, and member of the committee on carbon-14 dating of the American Anthropological Association and the Geological Society of America. He was chairman of the nominating committee of the Society for American Archaeology, of which society Curator Quimby is secretary and Dr. John B. Rinaldo,

Assistant Curator of Archaeology, is member of the executive committee. Curator Rinaldo attended the Southwestern Archaeological Conference at Point of Pines, Arizona, and Curator Quimby attended a conference on Hopwellian pottery at Illinois State Museum.

Dr. Theodor Just, Chief Curator of Botany, attended the meeting in Washington, D.C., of the Division of Geology and Geography of the National Research Council as chairman of the committee on paleobotany, the annual meeting of the Society for the Study of Evolution in Berkeley, California, as secretary of the society, and the meeting of the Botanical Society of America, American Institute of Biological Sciences, in Minneapolis. He is a member of the divisional committee of the Division of Biological Sciences of the National Science Foundation, Washington, D.C., and of the American Society of Naturalists. Dr. Julian A. Steyermark, Curator of the Herbarium, conducted the Central States Section of the Botanical Society of America on a three-day field trip in the Ozarks of Missouri. As member of the committee on preservation of indigenous strains of maize of the National Research Council, Dr. Hugh C. Cutler, Curator of Economic Botany, attended a meeting in Washington, D.C., to discuss methods of collection and preservation of valuable native varieties of New World corn.

Robert K. Wyant, Curator of Economic Geology, attended the annual meetings of the Geological Society of America in Detroit, and Bryan Patterson, Curator of Fossil Mammals, Dr. Rainer Zangerl, Curator of Fossil Reptiles, and Dr. Robert H. Denison, Curator of Fossil Fishes, attended the concurrent meetings of the Society of Vertebrate Paleontology. Curator Denison was appointed to the committee on fish classification of the American Society of Ichthyologists and Herpetologists at its annual meeting held this year in Chicago Natural History Museum.

Karl P. Schmidt, Chief Curator of Zoology, resigned the treasurer-ship of the Society for the Study of Evolution and was elected vice-president at the annual meeting of the society in Berkeley, California. He was made a member of the Board of Governors of the American Society of Ichthyologists and Herpetologists and was elected a Fellow of the American Academy of Arts and Sciences. Emmet R. Blake, Associate Curator of Birds, attended the meetings of the American Ornithologists' Union in Montreal, and Dr. Fritz Haas, Curator of Lower Invertebrates, attended the meetings of the American Malacological Union in Buffalo. Dr. R. M. Strong, Research Associate in Anatomy, was elected a fifty-year member of the American Association for the Advancement of Science in recognition of his fifty years of continuous membership.



BUFFALO HIDE SHIELD WITH PAINTED SKIN COVER
CROW

This shield of the Crow Indians will be shown in Hall 6 (Indians of the Plains).

The Director of the Museum and Chief Curator Schmidt attended the annual meeting in Philadelphia of the American Association of Museums, where Chief Curator Schmidt gave an address on the functions of university museums as part of a symposium on the problems of the university museum. The Director also attended the meeting of the council of the association. He visited during the year the Mariners' Museum, Newport News, Virginia, the American Museum of Natural History, New York, and the University Museum of the University of Pennsylvania and the Commercial Museum,

Philadelphia. The midwinter conference in Chicago of the American Library Association and sessions of various professional library organizations were attended by Mrs. Meta P. Howell, Librarian, and members of the Library staff.

A number of staff members serve on editorial boards of scientific journals. Curator Spoehr continued his review editorship of the *American Anthropologist* (official journal of the American Anthropological Association). Chief Curator Just continued as editor of *Lloydia* (quarterly journal of biological science published by Lloyd Library and Museum, Cincinnati), as editor of *Paleobotanical Report* (published by the Division of Geology and Geography of the National Research Council), and as member of the editorial board of *Evolution* (international journal of organic evolution) and was appointed a member of the editorial board of *American Journal of Botany* (official publication of the Botanical Society of America). Curator Zangerl continued as foreign-news editor of the *Society of Vertebrate Paleontology News Bulletin*. Chief Curator Schmidt continued as section editor (amphibians and reptiles) of *Biological Abstracts* (published under the auspices of the Union of American Biological Societies), consulting editor of *American Midland Naturalist* (published by the University of Notre Dame), and member of the editorial board of *Ecology* (official publication of Ecological Society of America).

Publications of staff members during 1951 besides those issued by Chicago Natural History Museum include the following:

DEPARTMENT OF ANTHROPOLOGY

COLLIER, DONALD

"Carbon-14 Dating," in *Essays on Archaeological Methods*, edited by James B. Griffin (Anthropological Papers, Museum of Anthropology, University of Michigan, no. 8), pp. 97-101

"New Radiocarbon Method for Dating the Past," reprinted from *Chicago Natural History Museum Bulletin* in *Biblical Archaeologist*, vol. 14, no. 1, pp. 25-28, and *Museums Journal*, vol. 51, no. 2, pp. 41-43

"Radiocarbon Dating, a Summary," *American Antiquity*, vol. 17, no. 1, part 2 (memoir no. 8), pp. 58-62 [with Frederick Johnson, Froelich Rainey, and R. F. Flint]

Review of *Indians of Peru* (by Pierre Verger), in *American Anthropologist*, vol. 53, no. 2, p. 273

MARTIN, PAUL S.

"The Peoples of Pine Lawn Valley," *Scientific American*, vol. 185, no. 1, pp. 46-51

"The Southwestern Co-Tradition," *Southwestern Journal of Anthropology*, vol. 7, no. 3, pp. 215-229 [with John B. Rinaldo]

DEPARTMENT OF ANTHROPOLOGY (*continued*)

SPOEHR, ALEXANDER

"Dioramas and Archaeology," *Archaeology*, vol. 4, no. 2, pp. 71-75

"John Fee Embree, 1908-1950" (obituary), *Human Organization*, vol. 10, no. 1, pp. 33-34

Review of *Anthropology in the Trust Territory Administration* (by Philip Drucker), in *Clearinghouse Bulletin of Research in Human Organization*, vol. 1, no. 1, p. 17

Review of *The Pacific Islands and Planning Micronesia's Future* (by Douglas Oliver), in *Human Organization*, vol. 10, no. 1, pp. 42-43

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

"New Proteaceae from Colombia," *Lloydia*, vol. 13, pp. 198-204

"New Species of Lueheopsis and Quararibea," in "Plantae Austro-Americanae VII" by Richard Evans Schultes, *Botanical Museum Leaflets* (Harvard University), vol. 15, pp. 49-55

"Notas a la Flora de Colombia XI," *Revista de la Academia Colombiana de Ciencias*, vol. 8, pp. 33-64

CUTLER, HUGH C.

"The Geographic Origin of Maize," *Chronica Botanica*, vol. 12, no. 4-6, pp. 167-169

DROUET, FRANCIS

"Cyanophyta," in *Manual of Phycology* by G. M. Smith and others (Waltham, Massachusetts: The Chronica Botanica Company), pp. 159-166 (chapter 8)

JUST, THEODOR

"Anton Kerner von Marilaun," in *The Background of Plant Ecology* by Henry S. Conrad (Iowa State College Press), pp. 5-6

"Citation of Specimens in Cytotaxonomic Literature," *Evolution*, vol. 5, no. 3, pp. 280-281

"Geología y Distribucion de las Plantas," *Anuario del Instituto Tropical de Investigaciones Científicas, Universidad Autonoma de El Salvador*, vol. 1, pp. 85-103

"Mesozoic Plant Microfossils and Their Geologic Significance," *Journal of Paleontology*, vol. 25, no. 6, pp. 729-735

Report of the Committee on Paleobotany, No. 19, 10 pages, mimeographed,

Report of the Committee on Paleobotany, No. 20, 20 pages, mimeographed,

Report of the Committee on Paleobotany, No. 21, 31 pages, mimeographed

(Washington, D.C.: National Research Council, Division of Geology and Geography)

Review of *A Revision of Fossil Sequoia and Taxodium in Western North America Based on the Recent Discovery of Metasequoia* (by Ralph W. Chaney), in *Journal of Paleontology*, vol. 25, no. 4, p. 542

Review of *Flore du Congo Belge et du Ruanda-Urundi, Spermatophytes* (by W. Robyns and others), in *Quarterly Review of Biology*, vol. 26, no. 2, pp. 205-6

Review of *Les Legumineuses du Gabon* (by François Pelligrin), in *Quarterly Review of Biology*, vol. 26, no. 3, p. 293

Review of *Plant Embryology, Embryogeny of the Spermatophyta* (by Donald Johansen), in *Quarterly Review of Biology*, vol. 26, no. 4, pp. 395-397

Review of *Plants of Bikini and Other Northern Marshall Islands* (by William Randolph Taylor), in *Quarterly Review of Biology*, vol. 26, no. 4, pp. 394-395

Review of *The Piperaceae of Northern South America* (by William Trelease and Truman G. Yuncker), in *Botanical Gazette*, vol. 112, no. 4, p. 536

DEPARTMENT OF BOTANY (*continued*)

SHERFF, EARL E.

"A Revision of the Hawaiian Island Genus *Nototrichium* Hillebr. (fam. *Amaranthaceae*)," in *Botanical Leaflets* (published by the author), no. 4, pp. 2-20

"*Dahlia Moorei*, a New Dahlia (fam. *Compositae*) from Northwestern Hidalgo," in *Botanical Leaflets* (published by the author), no. 5, pp. 22-24

"*Epiphytum*, a New Section of the Genus *Dahlia* Ca. (fam. *Compositae*)," in *Botanical Leaflets* (published by the author), no. 4, p. 21

"Miscellaneous Notes on New or Otherwise Noteworthy Dicotyledonous Plants," *American Journal of Botany*, vol. 38, no. 1, pp. 54-73

"New Entities in the Genus *Cheirodendron* Nutt. ex. Seem. (fam. *Araliaceae*) from the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 5, pp. 2-14

"Notes upon Certain New or Otherwise Interesting Plants of the Hawaiian Islands and Colombia," in *Botanical Leaflets* (published by the author), no. 3, pp. 2-8

"Some New or Otherwise Noteworthy Members of the Genus *Bidens* L. (fam. *Compositae*) from Tropical East Africa," in *Botanical Leaflets* (published by the author), no. 5, pp. 14-22

"Two Hawaiian Species of the Genus *Sophora* L. (fam. *Leguminosae*)," in *Botanical Leaflets* (published by the author), no. 5, pp. 24-25

STEYERMARK, JULIAN A.

"A Glabrous Variety of *Silphium terebinthinaceum*," *Rhodora*, vol. 53, pp. 133-135

"A New *Utricularia* from Honduras," *Ceiba*, vol. 1, pp. 125-126

"Botanical Areas in the Missouri Ozarks," *Missouri Botanical Garden Bulletin*, vol. 39, no. 6, pp. 126-135

"Plant Survey of Missouri," *Missouri Botanical Garden Bulletin*, vol. 39, no. 2, pp. 31-38

"The Genus *Tapeinostemon* (*Gentianaceae*)," *Lloydia*, vol. 14, no. 1, pp. 58-64

"The Snow *Trillium*," *Missouri Botanical Garden Bulletin*, vol. 29, no. 3, pp. 55-56

DEPARTMENT OF GEOLOGY

PATTERSON, BRYAN

"Early Cretaceous Mammals from Northern Texas," *American Journal of Science*, vol. 249, pp. 31-46

"Evolutionary Importance of the South African 'Man-Apes,'" *Nature*, vol. 167, p. 650 [with S. L. Washburn]

RICHARDSON, EUGENE S., JR.

"The Age of the Earth," *Pick and Dop Stick*, vol. 6, no. 3, pp. 2-6

DEPARTMENT OF ZOOLOGY

DYBAS, HENRY S.

"Albert Burke Wolcott, 1869-1950," *Coleopterist's Bulletin*, vol. 15, pp. 33-38, 1 illustration

GREY, MARION

"Additions to the Fish Fauna of Bermuda, with the Description of *Grammonus mowbrayi*, a New Brotulid," *Copeia*, 1951, no. 2, pp. 153-161, 2 illustrations

DEPARTMENT OF ZOOLOGY (continued)

HAAS, FRITZ

"Notes on Some Streptaxids," *Nautilus*, vol. 64, pp. 133-134

POPE, CLIFFORD H.

"A Study of the Salamander *Plethodon ouachitae* and the Description of an Allied Form," *Bulletin of the Chicago Academy of Sciences*, vol. 9, pp. 129-152, 6 illustrations

RAND, AUSTIN L.

"A Blue Jay's World," *Bulletin to the Schools*, vol. 37, no. 6, pp. 189-192

"Boardman Conover, 1892-1950," *Auk*, vol. 68, pp. 17-23 [with S. Gregory]

"Geographical Variation in the Pearl-spotted Owllet, *Glaucidium perlatum* (Vieillot)," *Natural History Miscellanea*, no. 86, pp. 1-6

"H. B. Conover's Bird Work in the Yukon," *Canadian Field-Naturalist*, vol. 64, no. 6, pp. 214-220

"On Enemy Recognition," *Auk*, vol. 68, no. 4, pp. 524-525

"The Nests and Eggs of *Mesoenas unicolor* of Madagascar," *Auk*, vol. 68, no. 1, pp. 23-26

SANBORN, COLIN CAMPBELL

"Mammals from Marcapata, Southeastern Peru," *Publicaciones del Museo de Historia Natural "Javier Prado"*, Lima, Peru, Ser. A., Zoologia, no. 6, pp. 1-26

SCHMIDT, KARL P.

"Annotated Bibliography of Marine Ecological Relations of Living Amphibians," *Marine Life Occasional Papers*, vol. 1, no. 9, pp. 43-46

"Annotated Bibliography of Marine Ecological Relations of Living Reptiles (except Turtles)," *Marine Life Occasional Papers*, vol. 1, no. 9, pp. 47-54

"The Amphibia and Pisces in the First Edition of the *Systema Naturae*," *Copeia*, 1951, no. 1, pp. 2-7

TRAYLOR, MELVIN A., JR.

"Notes on the Barbet Genus *Eubucco* (Capitonidae) in Southern Peru," *Auk*, vol. 68, pp. 508-510

THE BOOK SHOP

It seems almost incredible that the Book Shop, founded in 1939 with an appropriation of \$1,000, has so well served Museum visitors that its net sales during the year exceeded \$56,000. The principal purpose of the Book Shop continues to be that of providing authoritative books written in popular style on the subject-matter within the scope of the Museum. In response to popular demand, souvenirs and novelties have been added to our inventory, and this merchandise now accounts for an important proportion of total sales. The proceeds of the Book Shop have been used to create a new endowment fund for general Museum purposes. This fund at the end of the year totaled slightly more than \$67,000.

CAFETERIA

Another popular service of the Museum is the cafeteria and lunch-room. The total number of persons served this year was 309,370, an increase of more than 27,000 over last year. A study was made during the year of operations in the kitchen, with the result that several new pieces of equipment were added. These are listed in this Report in the following section.

MAINTENANCE, CONSTRUCTION, AND ENGINEERING

The program of moving, remodeling, and reconditioning storage and research areas took a large percentage of the time and effort of the Divisions of Maintenance and Engineering. Work was completed for the new quarters of the Division of Fishes and started on the newly assigned adjacent area in Hall B for the Division of Reptiles. The Division of Anatomy was moved and expanded, and twenty-four bays of steel shelving with doors were installed and steel doors were applied to fifty-four cases built in our own shops. The Division of Insects was expanded into the area vacated by the anatomists, with the installation of twenty-four bays of library shelving and forty-eight new cases of either steel or aluminum. Eighteen steel cases were installed for the Division of Mammals and twenty-eight for the Division of Fossil Plants. The Herbarium received one new six-door case and four eight-door cases. The necessary construction, lighting, and painting were done to permit the reopening of Hall 5 (Mary D. Sturges Hall) in the Department of Anthropology and the new Hall of Fossil Invertebrate Animals and Fossil Plants (Hall 37, Frederick J. V. Skiff Hall). An exhaust hood was installed and placed in operation in the plant-poisoning room, and an overhead hoist system was installed in one of the anthropology preparation rooms. The botany departmental library was enlarged by closing off certain adjacent unnecessary corridor space. Necessary bookshelves were installed and the new area was adequately lighted. Five new map cases were installed in the office of the Chief Curator of Geology. The Division of Photography was extensively remodeled.

In the James Simpson Theatre 250 chair seats and ten backs were reupholstered, and this work will continue in the coming year. It is impossible and fortunately unnecessary to recount all the details of the continual maintenance within the building, for, as with all large buildings, repairs are endless. Cleaning and painting of the building, improvement of lighting equipment, and replacement of



Books for children, books on natural history and anthropology, picture post-cards, and souvenirs make the Museum Book Shop a favorite spot for visitors of all ages.

burned-out bulbs go on ceaselessly. So, too, the Museum shops are constantly being called upon to make, invent, or devise labor-saving devices and auxiliary equipment for the various departments and divisions of the Museum. Every new or special exhibit, though planned in the scientific departments, calls heavily upon maintenance personnel for execution.

Keeping a building weatherproof in a very exposed position in a northern climate requires eternal vigilance and unceasing attention. During the year a weatherproofing compound was applied to the black-topped terrace areas between the upper and lower flights of steps. Both the north and the south steps were tuckpointed. Experimentation was continued with certain mastic compounds to find the one that best meets the requirement of adhesive and elastic qualities to waterproof the joints between the marble blocks that constitute the exterior of the building. Test coatings of waterproofing materials were sprayed on four areas, preparatory to a future project of coating the entire outside of the building. Eighty

broken skylight glasses were replaced and the entire skylight was washed. Thermopane windows were installed in the Division of Fishes on the ground floor and in all windows on the west façade on the third floor. Heating economies and elimination of condensation of moisture on the windows result from these installations. The windows on the south wall of Hall 34 were bricked up, preparatory to the complete reinstallation of the hall by the Department of Geology. New lighting conduits and outlets were provided so that the new installation may be entirely case-lighted.

Together with the normal maintenance of the building we are carrying out a program of modernization with regard to electric lighting. Replacement of old-type equipment with modern fluorescent lighting gives considerably better visibility to our exhibits and results in important savings of electric current. We are gradually shifting from general lighting to case lighting and are doing the work as fast as materials are obtainable. During the summer months extensive repairs are habitually made in the heating system of the building. A change in the angle of slope of certain return lines gave considerably better efficiency to the heating plant. The coal conveyor was overhauled. Twenty-five new buckets were installed, several sheets and channels replaced, and exposed steel was painted to retard corrosion. The usual summer inspection and care were given to boilers, pumps, and accessory equipment. In the cafeteria the scullery sink was replaced with a new three-compartment sink, and a new deep-fat frier and a steam-chef cooker were purchased and installed. Under existing contracts with the Chicago Park District and the Shedd Aquarium 39,725,966 pounds of steam were furnished at 100-pound pressure. Total steam generated throughout the year amounted to 72,794,850 pounds.

MISCELLANEOUS

In the pages that follow are submitted the Museum's financial statements, attendance statistics, door receipts, accessions, list of Members, articles of incorporation, and amended by-laws.

CLIFFORD C. GREGG, *Director*
Chicago Natural History Museum

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES CURRENT FUNDS

FOR YEARS 1951 AND 1950

Operating Fund

INCOME	1951	1950
From investments of:		
General endowment funds.....	\$ 689,554.11	\$ 694,106.31
Life and associate membership funds.....	27,335.22	25,106.83
	<u>\$ 716,889.33</u>	<u>\$ 719,213.14</u>
Chicago Park District.....	128,620.29	128,776.81
Annual and sustaining memberships.....	20,305.00	19,880.00
Admissions.....	33,335.00	30,310.25
Sundry receipts, including general purpose contributions.....	34,736.16	30,851.09
Restricted funds transferred to apply against Operating Fund expenditures (per contra)	106,812.52	65,818.34
	<u>\$1,040,698.30</u>	<u>\$ 994,849.63</u>
EXPENDITURES		
Collections:		
Purchases and expedition costs.....	\$ 77,777.27	\$ 39,483.34
Museum operating expenses capitalized....	61,916.51	75,141.85
	<u>\$ 139,693.78</u>	<u>\$ 114,625.19</u>
Furniture, fixtures, and equipment.....	57,083.42	57,322.60
Pensions and group and life-insurance pre- miums.....	74,072.46	72,620.66
Departmental operating expenses.....	101,587.66	105,501.80
General operating expenses.....	537,143.12	520,451.01
Building repairs and alterations.....	108,066.22	118,653.06
Provision for mechanical plant depreciation (per contra).....	10,000.00	10,000.00
Provision for contingencies (per contra).....	10,000.00
Appropriated to cover operating deficit of The N. W. Harris Public School Extension (per contra).....	421.27	863.74
	<u>\$1,038,067.93</u>	<u>\$1,000,038.06</u>
EXCESS (DEFICIENCY) OF INCOME OVER EX- PENDITURES.....	<u>\$ 2,630.37</u>	<u>\$ (5,188.43)</u>

CONTINUED ON NEXT PAGE

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES—CURRENT FUNDS

FOR YEARS 1951 AND 1950 (CONTINUED)

The N. W. Harris Public School

Extension	1951	1950
Income from endowments.....	\$ 20,208.02	\$ 19,625.98
Expenditures.....	20,629.29	20,489.72
DEFICIT TRANSFERRED TO OPERATING FUND (PER CONTRA).....	<u>\$ 421.27</u>	<u>\$ 863.74</u>

Other Restricted Funds

INCOME

From Specific Endowment Fund investments.	\$ 49,005.36	\$ 43,962.32
Contributions for specified purposes.....	36,850.65	25,804.62
Operating Fund appropriations for mechanical plant depreciation and contingencies (per contra).....	20,000.00	10,000.00
Sundry receipts—net.....	25,803.33	21,986.02
	<u>\$ 131,659.34</u>	<u>\$ 101,752.96</u>

EXPENDITURES

Transferred to Operating Fund to apply against expenditures (per contra).....	\$ 106,812.52	\$ 65,818.34
Added to Endowment Fund principal.....	25,000.00
	<u>\$ 131,812.52</u>	<u>\$ 65,818.34</u>
EXCESS (DEFICIENCY) OF INCOME OVER EX- PENDITURES.....	<u>\$ (153.18)</u>	<u>\$ 35,934.62</u>

TO THE TRUSTEES
CHICAGO NATURAL HISTORY MUSEUM
CHICAGO, ILLINOIS

In our opinion the accompanying statement presents fairly the income and expenditures of the current funds of Chicago Natural History Museum for the years 1950 and 1951, in conformity with generally accepted accounting principles consistently applied during the periods. Our examination of the statement was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

ARTHUR YOUNG AND COMPANY

Chicago, Illinois
January 31, 1952

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1951 AND 1950

	1951		1950
Total attendance.....	1,251,752		1,173,661
Paid attendance.....	133,340		121,241
Free admissions on pay days:			
Students.....	32,771		31,474
School children.....	87,590		81,601
Teachers.....	4,387		3,675
Members.....	492		531
Service men and women.....	3,128		1,061
Special meetings and occasions.....	3,377		4,083
Admissions on free days:			
Thursdays (52).....	172,376	(52)	161,721
Saturdays (52).....	316,178	(52)	309,188
Sundays (52).....	498,210	(52)	459,086
Highest attendance on any day (September 2).....	16,266	(September 3)	13,889
Lowest attendance on any day (December 21).....	61	(December 6)	98
Highest paid attendance (September 3) ..	4,244	(September 4)	3,100
Average daily admissions (363 days).....	3,448	(363 days)	3,233
Average paid admissions (207 days).....	644	(207 days)	586
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Copies of <i>General Guide</i> sold.....	25,410		21,722
Number of articles checked.....	43,321		31,802
Number of picture post-cards sold.....	228,192		177,051
Sales of Museum publications (both scientific and popular) and photographs; rental of wheel chairs.....	\$10,865.19		\$13,177.60

Contributions and Bequests

Contributions and bequests to Chicago Natural History Museum may be made in securities, money, books, or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Chicago Natural History Museum of the City of Chicago, State of Illinois:

Cash contributions made within the taxable year to Chicago Natural History Museum to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax.

ACCESSIONS, 1951

DEPARTMENT OF ANTHROPOLOGY—ACCESSIONS

ABRAMOWSKI, HAROLD, Chicago: 1 full-grooved axe, 2 celts, 2 small projectile points, 3 large points, 2 scrapers—Waukesha County, Wisconsin (gift)

ARIZONA STATE MUSEUM, Tucson: 67 archaeological specimens—Ventana Cave, Papago Indian Reservation, Arizona (exchange)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Paul S. Martin (Southwest Archaeological Expedition, 1951): 3,889 specimens, including stone, bone, clay, pottery, leather, wood, cordage, woven, and miscellaneous perishable artifacts—Cordova Cave, Negrito Cave, Kiehne Pueblo, Negrito Cliff Dwelling, and Fox Farm Site Kiva, near Reserve, New Mexico

Collected by Dr. Alexander Spoehr (Micronesia Anthropological Expedition, 1949–50): 50 specimens, including pottery sherds, and artifacts of stone, shell, and metal—Rota, Mariana Islands; 9 specimens, including pottery jar, shell adze, and 7 lots of pottery sherds—Babeldaob, Palau Islands

Purchases: 75 ethnological specimens, 100 photographs and negatives—Upper Orinoco, Venezuela; 2 Menomini Indian medicine pouches—Neopit, Wisconsin; 2 lava lavas—Micronesia; 1 coconut grater—Caroline Islands, Micronesia

DENVER ART MUSEUM, Denver, Colorado: 1 Huron feather headdress—Quebec; 1 Cochiti leather mask—Cochiti Pueblo, New Mexico (exchange)

FAUST, KITTY, Evanston, Illinois: 1 piece of tapa—Tongatabu, Tonga, Polynesia (gift)

LOGAN MUSEUM, BELOIT COLLEGE, Beloit, Wisconsin: 73 specimens, including Mandan and Arikara stone and bone artifacts and pottery sherds—North and South Dakota (exchange)

MANIERRE, FRANCIS E., Chicago: 2 carved wood staffs of African chieftans—Southeast Africa (gift)

NATIONAL MUSEUM OF MEXICO, Mexico City, Mexico: 1,126 archaeological specimens—Mexico (exchange)

PEABODY MUSEUM OF AMERICAN ARCHAEOLOGY AND ETHNOLOGY, Cambridge, Massachusetts: type collection of archaeological material—Coclé, Panama (exchange)

SMITH, MRS. ISABEL COLDREN, Glen-coe, Illinois: 1 Sioux dress, 1 pipe bag, 2 arrows, 1 pipe and pipe cover—Western Plains, United States (gift)

STARBUCK, MRS. FRED L., Northbrook, Illinois: 1 copper spear head—Camp McCoy, near Sparta, Wisconsin (gift)

WAHL, ORLIN I., Evanston, Illinois: 1 perforated stone, 2 pipes, 1 celt, 1 copper crescent—McHenry County, Illinois (gift)

WRIGHT, WILLIAM RYER, Highland Park, Illinois: 2 Late North Coast blackware pottery vessels—North Coast of Peru; 5 Indian pipes, pipe bowls, and stems, and 1 Spanish knife—North America (gift)

DEPARTMENT OF BOTANY—ACCESSIONS

ALLAN HANCOCK FOUNDATION, Los Angeles: 160 specimens of algae (exchange)

BARKLEY, DR. FRED A., Chicago: 6 specimens of algae, 8 plant specimens (gift)

BENDER, WILLIAM E., Naperville, Illinois: 1 cryptogamic specimen (gift)

BIALIK, ANTHONY, Chicago: 1 plant specimen, 13 cryptogamic specimens (gift)

BISHOP MUSEUM, BERNICE P., Honolulu, Hawaii, T.H.: 31 plant specimens (gift)

BLOMQUIST, DR. H. L., Durham, North Carolina: 1 cryptogamic specimen (gift)

BLUM, DR. JOHN L., Buffalo: 14 cryptogamic specimens (exchange)

BOELCKE, OSVALDO, Acassuso, Argentina: 70 plant specimens (exchange)

BOTANIC GARDEN, Gothenburg, Sweden: 100 plant specimens, 145 cryptogamic specimens (exchange)

BOTANISKA MUSEET, Uppsala, Sweden: 38 plant specimens, 724 cryptogamic specimens (exchange)

BRAUN, DR. E. LUCY, Cincinnati: 3 plant specimens (gift)

BROWN, WILLIAM L., Johnston, Iowa: 4 economic specimens (gift)

BUMZAHM, CARLOS, Chicago: 39 cryptogamic specimens (gift)

CALIFORNIA, UNIVERSITY OF, Berkeley: 320 cryptogamic specimens (gift); 182 plant specimens, 576 cryptogamic specimens (exchange)

CARLSON, DR. MARGERY C., Evanston, Illinois: 51 cryptogamic specimens (gift)

CARNEGIE INSTITUTION OF WASHINGTON, Stanford University, California: 91 plant specimens (gift)

CARNEGIE MUSEUM, Pittsburgh: 339 plant specimens (exchange)

CASSEL, WILLIAM A., Philadelphia: 24 cultures of algae (gift)

CASTANEDA, R. ROMERO, Bogotá, Colombia: 89 plant specimens (gift)

CHAPMAN, DR. V. J., Auckland, New Zealand: 2 specimens of algae (gift)

CHAPP, DONALD F., Chicago: 3 cultures of algae (gift)

CHASE, VIRGINIUS H., Peoria Heights, Illinois: 5 plant specimens, 1 cryptogamic specimen (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Hugh C. Cutler and Jack Reeves (Southwest Botanical Field Trip, 1951): 449 plant specimens

Collected by Dr. B. E. Dahlgren (Cuba Botanical Expedition, 1950-51): 2 cryptogamic specimens

Collected by D. Dwight Davis and Robert F. Inger (Borneo Zoological Expedition, 1950): 21 plant specimens, 15 cryptogamic specimens

Collected by Emil Sella and Samuel H. Grove, Jr. (Florida Botanical Field Trip, 1951): 7 cryptogamic specimens

Purchases: 200 plant specimens—Spain; 410 plant specimens—Peru; 94 plant specimens—Africa

COCKE, DR. E. C., Wake Forest, North Carolina: 3 cryptogamic specimens (gift)

CONSERVATOIRE BOTANIQUE, Geneva, Switzerland: 2,104 cryptogamic specimens (exchange)

COOKE, DR. WILLIAM BRIDGE, Loveland, Ohio: 5 cryptogamic specimens (gift)

COPULOS, MILTON, Chicago: 1 cryptogamic specimen (gift)

CRIBB, DR. A. B., New South Wales, Australia: 63 specimens of algae (exchange)

CULBERSON, WILLIAM L., Cincinnati: 38 cryptogamic specimens (gift)

DAILY, MRS. FAY K., Indianapolis: 2 specimens of algae (gift)

DAILY, WILLIAM A., Indianapolis: 53 specimens of algae (gift); 85 specimens of algae (exchange)

DEGENER, DR. OTTO, Honolulu, Hawaii, T.H.: 7 specimens of algae (gift)

DILLER, DR. VIOLET M., Cincinnati: 54 cryptogamic specimens (gift)

DONES, MATHIAS, Chicago: 1 cryptogamic specimen (gift)

DOTY, DR. MAXWELL S., Honolulu, Hawaii, T.H.: 152 cryptogamic specimens (gift)

DUKE UNIVERSITY, Durham, North Carolina: 100 plant specimens (exchange)

DUNKESON, R. L., Willow Springs, Missouri: 26 plant specimens (gift)

EDESIO M., DR. I., Porto Alegre, Brazil: 20 plant specimens (gift)

EDMONDSON, DR. W. T., Seattle: 1 cryptogamic specimen (gift)

ESCUELA AGRÍCOLA PANAMERICANA, Tegucigalpa, Honduras: 862 plant specimens (exchange)

EWAN, DR. JOSEPH, New Orleans: 6 cryptogamic specimens (gift)

FITZGERALD, GEORGE P., Madison, Wisconsin: 5 cryptogamic specimens (gift)

FLINT, DR. L. H., Baton Rouge, Louisiana: 7 cryptogamic specimens (exchange)

FREEMAN, R. B., Western Springs, Illinois: 1 plant specimen (gift)

FRITSCH, PROFESSOR F. E., Cambridge, England: 4 specimens of algae (gift)

FULLER, DR. GEORGE D., Springfield, Illinois: 3 plant specimens (gift)

- GILTNER, DR. L. T., Washington, D.C.: 1 cryptogamic specimen (gift)
- GREENBERG, ALBERT, Tampa, Florida: 1 cryptogamic specimen (gift)
- GROSS, R. A., La Ceiba, Honduras: 1 plant specimen (gift)
- GROW, RAY, AND SIMON SEGAL, Chicago: 1 plant specimen (gift)
- GUBA, DR. E. F., Waltham, Massachusetts: 1 cryptogamic specimen (gift)
- HAAS, DR. FRITZ, Chicago: 1 cryptogamic specimen (gift)
- HABEEB, DR. HERBERT, Grand Falls, New Brunswick, Canada: 40 cryptogamic specimens (exchange)
- HERRE, DR. A. W., Olympia, Washington: 1 cryptogamic specimen (gift)
- HEWETSON, W. T., Freeport, Illinois: 1 plant specimen (gift)
- HOLMES, E. D., Hinsdale, Illinois: 1 cryptogamic specimen (gift)
- HUMM, DR. HAROLD J., Tallahassee, Florida: 3 cryptogamic specimens (gift)
- ILLINOIS STATE MUSEUM, Springfield: 125 plant specimens (gift); 50 plant specimens (exchange)
- ILTIS, DR. HUGH, St. Louis: 1 cryptogamic specimen (gift)
- IMSHAUG, H. A., Ann Arbor, Michigan: 3 cryptogamic specimens (gift)
- INSTITUTE OF JAMAICA, Kingston: 72 cryptogamic specimens (gift)
- INSTITUTO AGRONOMICO DO NORTE, Belem, Brazil: 4 plant specimens (gift)
- INSTITUTO AGROPECUARIO NACIONAL, Guatemala City, Guatemala: 6 plant specimens (gift)
- INSTITUTO DE BOTANICA, Sao Paulo, Brazil: 36 plant specimens (exchange)
- INSTITUTO GEOBIOLOGICO, Porto Alegre, Brazil: 33 plant specimens (exchange)
- ISELY, DR. DUANE, Ames, Iowa: 127 plant specimens (exchange)
- JARDIM BOTANICO, Rio de Janeiro, Brazil: 141 plant specimens (exchange)
- JOLY, DR. AYLTHON B., Ann Arbor, Michigan: 42 cryptogamic specimens (gift)
- KAISER, MARGARET, Carbondale, Illinois: 1 microscope slide of wood section (exchange)
- KILLIP, DR. E. P., Summerland Key P. O., Florida, AND J. FRANCIS MACBRIDE, Stanford University, California: 6 cryptogamic specimens (gift)
- KJELLMERT, GOSTA, Arboga, Sweden: 500 plant specimens (exchange)
- KLEEREKOPER, DR. HERMAN, Hamilton, Ontario, Canada: 331 specimens of algae (gift)
- KOCK, DR. LEO F., Bakersfield, California: 57 cryptogamic specimens (gift)
- KRAUS, E. J., Chicago: 2,000 negatives (gift)
- LAMBERT, RONALD J., Lake Zurich, Illinois: 2 plant specimens (gift)
- LASKER, DR. RUEBEN, Coral Gables, Florida: 6 specimens of algae (gift)
- LAUGHLIN, KENDALL, Chicago: 7 plant specimens (gift)
- LINDSTEDT, DR. ALF., Yotad, Sweden: 4 specimens of algae (gift)
- LLANO, DR. GEORGE A., Washington, D.C.: 12 specimens of algae (gift)
- LOUDERBACK, HAROLD B., Argo, Illinois: 68 cryptogamic specimens (gift)
- LOUISIANA STATE UNIVERSITY, Baton Rouge: 2 specimens of algae (exchange)
- LUND, UNIVERSITY OF, Lund, Sweden: 176 cryptogamic specimens (exchange)
- MACBRIDE, J. FRANCIS, Stanford University, California: 129 specimens of algae (gift)
- MADSEN, DR. GRACE C., Tallahassee, Florida: 38 specimens of algae (gift)
- MASON, DR. CHARLES T., JR., Madison, Wisconsin: 1 plant specimen (gift)
- MATUDA, EIZI, Mexico City, Mexico: 70 plant specimens (exchange)
- MAURO, SALVATORE, Miami, Florida: 1 plant specimen (gift)
- MAY, DR. VALERIE, Sydney, Australia: 10 specimens of algae (gift)
- MICHIGAN, UNIVERSITY OF, Ann Arbor: 110 cryptogamic specimens (exchange)
- MILLAR, JOHN R., Chicago: 1 cryptogamic specimen (gift)
- MIRANDA, DR. FAUSTINO, Chapultepec, Mexico, D.F.: 6 plant specimens (gift)
- MISSOURI BOTANICAL GARDEN, St. Louis: 160 plant specimens (gift); 175 plant specimens (exchange)
- MOORE, DR. DWIGHT, Fayetteville, Arkansas: 1 plant specimen (gift)
- MULLER, DR. C. H., Santa Barbara, California: 82 plant specimens (gift)
- MUSEUM NATIONAL D'HISTOIRE NATURELLE, Paris, France: 150 cryptogamic specimens (exchange)

NATURHISTORISCHES MUSEUM, Vienna, Austria: 1,600 cryptogamic specimens (exchange)

NEWTON, LINDA, London, England: 2 specimens of algae (gift)

NEW YORK BOTANICAL GARDEN, New York: 22 specimens of algae (gift); 189 photographs of plant specimens, 25 type photographs, 186 plant specimens (exchange)

NIELSEN, DR. CHESTER S., Tallahassee, Florida: 4 plant specimens (gift)

NIELSEN, DR. CHESTER S., AND DR. GRACE C. MADSEN, Tallahassee, Florida: 556 specimens of algae (gift)

OHWI, J., Tokyo, Japan: 200 plant specimens (exchange)

OREGON WOOD CHEMICAL COMPANY, Springfield: 1 economic specimen (gift)

PALMER, E. J., Webb City, Missouri: 209 plant specimens (gift)

PALUMBO, RALPH F., Seattle: 1 cryptogamic specimen (gift)

PENNSYLVANIA, UNIVERSITY OF, Philadelphia: 124 cryptogamic specimens, 520 plant specimens (exchange)

PHILIPPINES, REPUBLIC OF THE, DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES, BUREAU OF FORESTRY, Manila: 32 wood specimens (gift)

PHILIPPINES, UNIVERSITY OF THE, Quezon City, Philippine Islands: 323 specimens of algae (exchange)

POCOCK, DR. MARY A., Cape Town, South Africa: 1 cryptogamic specimen (gift)

PROCTOR, V. W., Columbia, Missouri: 2 specimens of algae (gift)

RAND, DR. AUSTIN L., Chesterton, Indiana: 1 plant specimen (gift)

RHODEHAMEL, JOHN, Indianapolis: 2 plant specimens (gift)

RICHARDS FUND, DONALD: 58 mosses, 32 corallines algae, 310 lichens, 500 cryptogams, 282 specimens of fungi, 122 cryptogams from Canada; 800 specimens of mosses (Herbarium of I. Hagen); 235 specimens of marine algae, 290 specimens of fungi from North America, 111 specimens of moss from New Zealand; 166 cryptogams from Wisconsin, 343 cryptogams (Herbarium of A. B. Seymour)

RICHARDS FUND, ELMER J.: 625 specimens of lichens from Scandinavia, 5,600 specimens of lichens, 20,000 cryptogamic specimens

RIJKSHERBARIUM, Leiden, Netherlands: 23 specimens of algae (exchange)

ROYAL BOTANIC GARDENS, Kew, England: 70 plant specimens (exchange)

SAEGER, DR. ALBERT, Kansas City, Missouri: 1 cryptogamic specimen (gift)

SAINSBURY, G. O. K., Wairoa, New Zealand: 125 cryptogamic specimens (exchange for publication)

SANBORN, COLIN C., Highland Park, Illinois: 29 plant specimens, 2 cryptogamic specimens (gift)

SCHWERDTFEGER, DR. F., Guatemala City, Guatemala: 39 pinus (gift)

SCOLNIK, DR. ROSA, Córdoba, Argentina: 49 plant specimens (gift)

SELLA, EMIL, Chicago: 12 specimens of gift (gift)

SHERFF, DR. EARL E., Chicago: 77 plant specimens, 119 negatives, 123 photographic prints (gift)

SILVA, HERMAN, East Lansing, Michigan: 2 specimens of algae (gift)

SOUKUP, J., Lima, Peru: 47 plant specimens (gift)

STANDLEY, PAUL C., Tegucigalpa, Honduras: 1 plant specimen (gift)

STANNARD, DR. LEWIS, Urbana, Illinois: 4 plant specimens (gift)

STASZKUS, ADAM, Chicago: 1 cryptogamic specimen (gift)

STEVENSON, DR. JOHN L., Beltsville, Maryland: 1 cryptogamic specimen (gift)

STEYERMARK, MRS. JULIAN A., Barrington, Illinois: 79 plant specimens (gift)

SWINK, FLOYD E., Chicago: 644 plant specimens (gift)

SWINK, FLOYD E., AND A. S. ROUFFA, Chicago: 1 plant specimen (gift)

TAYLOR, DR. WILLIAM R., Ann Arbor, Michigan: 60 specimens of algae (gift)

TEMPLETON, DR. BONNIE C., Los Angeles: 1 cryptogamic specimen (gift)

THIERET, JOHN W., Chicago: 187 plant specimens, 2 cryptogamic specimens (gift)

UNITED STATES DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.: 179 plant specimens (gift)

UNITED STATES NATIONAL MUSEUM, SMITHSONIAN INSTITUTION, Washington, D.C.: 10 specimens of algae, 20 plant specimens (gift); 234 cryptogamic specimens, 947 plant specimens (exchange)

URIBE, P. URIBE, Bogotá, Colombia: 14 plant specimens (gift)

VAN TRESS, ROBERT, Chicago: 1 plant specimen (gift)

VARGAS C., CESAR, Cuzco, Peru: 30 specimens of algae (gift)

VATTER, ALBERT, Urbana, Illinois: 33 ferns (gift)

VELOSO, DR. HENRIQUE P., Santa Catarina, Brazil: 33 plant specimens (gift)

VIENNA, UNIVERSITY OF, BOTANISCHES INSTITUT UND BOTANISCHER GARTEN, Vienna, Austria: 200 plant specimens (exchange)

VOTH, DR. PAUL D., Chicago: 5 specimens of algae (gift)

WALKER, HARRY G., Langhorne, Pennsylvania: 1 cryptogamic specimen (gift)

WASHINGTON, UNIVERSITY OF, Seattle: 213 plant specimens (exchange)

WHITEHOUSE, DR. EULA, Dallas, Texas: 142 specimens of algae (gift)

WHITTAKER, THOMAS W., La Jolla, California: 8 economic specimens (exchange)

WILLIAMS, LLEWELLYN, Randolph, Wisconsin: 112 economic specimens, 17 wood specimens (gift)

WILLIAMS, DR. LOUIS O., Tegucigalpa, Honduras: 6 plant specimens (gift)

WILSON, ARCHIE F., Flossmoor, Illinois: 111 plant specimens (gift)

WISCONSIN, UNIVERSITY OF, Madison: 19 plant specimens (gift)

WOOD, MIRIAM, Chicago: 3 cryptogamic specimens (gift)

DEPARTMENT OF GEOLOGY—ACCESSIONS

BRIDWELL, L. H., Forestburg, Texas: fossil fish-tooth—Texas (gift)

BUCHANAN, F. D., Chicago: 2 fossil invertebrates—Illinois and Indiana (gift)

CALIFORNIA, UNIVERSITY OF, Berkeley: collection of fossil fish—various localities (gift)

CARTER, ALICK L., Kenmore, New York: 4 fossil-fish specimens—New York (gift)

CHALMERS CRYSTAL FUND: germanite crystal—Africa (gift)

CHICAGO, UNIVERSITY OF, Chicago: fossil vertebrates, paleobotany collection—various localities (gift)

CHICAGO NATURAL HISTORY MUSEUM: Collected by Dr. Robert H. Denison (Eastern States Paleontological Field Trip, 1951): 207 fossil-fish specimens—various localities

Collected by George Langford, Mrs. Langford, Dr. and Mrs. R. H. Whitfield, and Jon S. Whitfield (Wilmington, Illinois, Paleobotanical Field Trips, 1951): 550 flora and 105 fauna specimens—Illinois

Collected by George Langford, Eugene S. Richardson, Jr., and R. H. Whitfield (Tennessee Paleontological Field Trips, 1951): 1,465 fossil-plant and fossil-invertebrate specimens—Tennessee; 1,167 fossil-plant specimens—various localities

Collected by Bryan Patterson and Orville L. Gilpin (Texas Paleontological Expedition, 1951): collection of microfauna—Texas

Collected by Dr. Sharat K. Roy (Salvadorian Project, 1950–51): 200 volcanic and sedimentary rocks—El Salvador

Collected by William D. Turnbull and Priscilla F. Turnbull (Oklahoma Paleontological Field Trip, 1951): Cotylorhynchus skeleton—Oklahoma

Collected by Dr. Rainer Zangerl, Eugene S. Richardson, Jr., and Dr. Robert H. Denison (Indiana field work): collection of fossil invertebrates and fossil fish—Indiana

Purchases: restoration of Archeopteryx, fossil cycadeoid trunk, 12 fossil invertebrates—various localities

CHLUPAC, H. E., Vienna, Austria: 51 fossil invertebrates—Austria (gift)

CLOUD, F. J., Lilesville, North Carolina: fossil horse-tooth—North Carolina (gift)

CROSBY, MRS. SAMUELLA, Chicago: gold necklace and bracelet set with semi-precious stones—India (gift)

DEO, CLAUDE, Stratford, Iowa: 4 brachiopod specimens—Canada (gift)

EARGLE, D. H., Washington, D.C.: 1 fossil invertebrate—Alabama (gift)

EVANS, W. V., Wrigley, California: pelecypod specimens—California (gift)

GENTZ, O. A., Chicago: star ruby—North Carolina (gift)

GRAY, L. Z., Evanston, Illinois: mammoth tooth—Siberia (gift)

HINTON, G. B., Presido, Texas: 2 vanadanite specimens—Mexico (gift)

MICHIGAN, UNIVERSITY OF, Ann Arbor: 3 casts of fossil mammal type-specimens—various localities (exchange)

MISSISSIPPI GEOLOGICAL SURVEY, University: 1 ammonite—Mississippi (gift)

REED, CHARLES, Chicago: 1 fossil invertebrate—Nebraska (gift)

THOMPSON, ROBERT T., Cave Creek, Arizona: 1 specimen of specular hematite—Arizona (gift)

WALKER, ALMA C., Spokane: 18 fossil-leaf specimens—various localities (gift)

WHITFIELD, JON S., Evanston, Illinois: 87 fossil invertebrates—Illinois (gift)

WHITFIELD, DR. AND MRS. R. H., Evanston, Illinois: 140 fossil-plant specimens—Illinois (gift)

WOLEY, VIDA, Evanston, Illinois: carved coral earrings, bracelets, necklace, and broach—(gift)

ZANGERL, DR. RAINER, Hazelcrest, Illinois: 2 fossil-reptile specimens—Nevada (gift)

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, Philadelphia: 5 birds—Bolivia (exchange)

ACOSTA Y LARA, EDUARDO, Montevideo, Uruguay: 3 mammals—Brazil and Uruguay (gift)

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 1 fish—Peru (gift)

ARKANSAS, UNIVERSITY OF, DEPARTMENT OF ZOOLOGY, Fayetteville: 2 mammals—Arkansas (gift)

ARKANSAS GAME AND FISH COMMISSION, Little Rock: 2 mammals—Arkansas (gift)

AUFFENBERG, WALTER, Deland, Florida: 1 reptile—Florida (gift)

BANKS, LESLIE, Knoxville, Tennessee: 1 insect—Tennessee (gift)

BARBOUR, DR. ROGER W., Lexington, Kentucky: 26 salamanders (paratypes)—Kentucky (gift)

BARR, JOHN, Urbana, Illinois: a problematic item of animal origin, perhaps the egg case of a worm—Florida (gift)

BETLE, DOROTHY E., Laramie, Wyoming: 25 lots of shells—Wyoming and Colorado (gift)

BEIMLER, THEODORE F., Brownsville, Texas: 1 reptile—Texas (gift)

BEVIER, DR. GEORGE, La Paz, Bolivia: 12 mammals—Bolivia (gift)

BIRDSALL, MRS. C. A., Chicago: 2 birds—locality unknown (gift)

BISHOP, MRS. SHERMAN C., Rochester, New York, AND MRS. DANIEL W. O'DELL, Ithaca, New York: the Bishop Collection of Salamanders—North America (gift)

BOARDMAN, RONALD P., Lake Forest, Illinois: 1 bird—locality unknown (gift)

BOKERMANN, WERNER C. A., Sao Paulo, Brazil: 2 amphibians—Brazil (exchange)

BONNE-WEPSTER, MRS. J., Batavia, Java: 13 reprints on mosquitoes (exchange)

BRADBURY, MARGARET G., Chicago: 6 mammals, 7 shells—Missouri (gift)

BRIDWELL, L. H., Forestburg, Texas: 68 shells—Texas (gift)

BRODIE, LAURA, Chicago: 158 reptiles and amphibians, 38 fishes—South Carolina (gift)

BRYANT, OWEN (address lacking): 11 insects—Colorado and Arizona (gift)

BULLIS, HARVEY R., JR., Pascagoula, Mississippi: 15 deep-water scallops—Gulf of Mexico (gift)

BULLOCK, DR. D. S., Angol, Chile: 8 lizard eggs—Chile (gift)

BURNSIDE, GRAHAM, Laramie, Wyoming: 7 mammals—Wyoming (gift)

BUTLER, DR. PHILIP A., Pensacola, Florida: 2 fishes—Florida (gift)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco: 246 reptiles and amphibians—Brazil (exchange)

CAMRAS, DR. SIDNEY, Chicago: 339 insects—United States (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Harry A. Beatty (West Africa Zoological Expedition, 1950–51): 2 mammals, 692 birds—West Africa

Collected by D. Dwight Davis and Robert F. Inger (Borneo Zoological Expedition, 1950): 358 mammals, 449 birds, 873 amphibians and reptiles, 4,416 fishes, 18 lots of lower invertebrates—Borneo

Collected by Henry S. Dybas (Indiana cave field work): 2 fishes, 2,315 insects and their allies, 37 lots of shells—southeastern United States

Collected by Dr. Fritz Haas (Bermuda Zoological Expedition, 1950): 19 fishes—Bermuda

Collected by Philip Hershkovitz (Colombia Zoological Expedition, 1948–51): 1,014 mammals, 30 birds, 186 reptiles and amphibians—Colombia

Collected by Robert F. Inger and Karl Kettner (Field Work for Cave Fishes, 1951): 11 salamanders, 5 fishes, 6 crustaceans—Missouri

Collected by Dr. Paul S. Martin (Southwest Archaeological Expedition, 1951): 1 partial mammal skeleton and skull—New Mexico

Collected by Bryan Patterson (Texas Paleontological Expedition, 1951): 1 reptile—Texas

Collected by Clifford H. Pope (Mexico Zoological Field Trip, 1951): 499 reptiles and amphibians—Mexico

Collected by D. S. Rabor (Philippine Islands field work): 48 mammals, 110 birds, 124 reptiles and amphibians—Philippine Islands

Collected by Dr. Austin L. Rand and Stanley Rand (Salvadorian Project, 1950–51): 7 mammals, 540 birds, 203 reptiles and amphibians—El Salvador

Collected by A. T. Torres (Philippine Islands field work): 16 mammals, 157 birds—Philippine Islands

Collected by Rupert L. Wenzel and Colin C. Sanborn (La Salle, Illinois, bat-cave field work): 20 bats in alcohol, 6 bat skeletons—Illinois

Collected by Loren P. Woods (Cooperative Field Work with United States Fish and Wildlife Service in Gulf of Mexico, 1951): 1 partial mammal skull and skeleton, 2,366 fishes—Gulf of Mexico

Collected by Loren P. Woods and Robert F. Inger (Field Work for Cave

Fishes, 1951): 421 fishes—Illinois, Indiana, and Kentucky

Department of Geology: part of lower jaw of sea otter—California (gift)

Purchases: 646 mammals, 561 birds, 6 eggs, 1,302 reptiles and amphibians, 11,000 lots of fishes; 4,082 fishes, approximately 60,000 insects and their allies; 555 lower invertebrates

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 7 mammals, 8 birds 1 egg, 2 reptiles—various localities (gift)

DAHLGREN, DR. B. E., Chicago: 1 mammal, 1 reptile—Cuba (gift)

DANIEL, HERMANO, Medellín, Colombia: 52 reptiles and amphibians—Colombia (gift)

DIXON, JOHN N., Chicago: 24 lots of lower invertebrates—Tahiti (gift)

DLUHY, EUGENE, Chicago: 170 *Parnassius* butterflies—Europe (exchange)

DUNDEE, HAROLD A., Lawrence, Kansas: 4 salamanders—Arkansas (gift)

EMERSON, DR. ALFRED E., Chicago: 1 insect (paratype)—Madagascar (gift)

FIELD, DR. HENRY, Washington, D.C.: 5 fishes—Saudi Arabia (gift)

FINN, SHELLY, Childersburg, Alabama: 12 shells—Alabama (gift)

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 Bartlett, Frederic C.
 Barton, Mrs. Enos M.
 Basile, William B.
 Basta, George A.
 Bastian, Charles L.
 Bastien, A. E.
 Bates, Mrs. A. M.
 Bates, George A.
 Bates, Joseph A.
 Battey, Paul L.
 Baum, Mrs. James E.
 Baum, Wilhelm
 Baumann, Harry P.
 Bausch, William C.
 Beach, Miss Bess K.
 Beach, E. Chandler
 Beachy, Mrs. Walter F.
 Beatty, John T.
 Bechtner, Paul
 Beck, Alexander
 Becker, Benjamin V.
 Becker, Frederick G.
 Becker, James H.
 Becker, Louis
 Becker, Louis L.
 Beckler, R. M.
 Beckman, Victor A.
 Beckman, Mrs. Victor A.
 Beckman, William H.
 Beddoes, Hubert
 Behr, Mrs. Edith
 Beidler, Francis, II
 Belden, Joseph C., Jr.
 Bell, Mrs. Laird
 Benjamin, Jack A.
 Benner, Harry
 Bennett, Bertram W.
 Bennett, S. A.
 Bennett, Prof.
 J. Gardner
 Benson, John
 Benson, Mrs.
 Thaddeus R.
 Bent, John P.
 Bentley, Mrs. Cyrus
 Berend, George F.
 Berkely, Dr. J. G.
 Berkson, Mrs. Maurice
 Bernstein, Philip
 Berry, V. D.
 Bersbach, Elmer S.
 Bertschinger, Dr. C. F.
 Besly, Mrs. C. H.
 Bettman, Dr. Ralph B.
 Bichl, Thomas A.
 Biddle, Robert C.
 Biehn, Dr. J. F.
 Bigelow, Mrs. Ann
 Biggers, Bryan B.
 Biggs, Mrs. Joseph H.
 Bigler, Mrs. Albert J.
 Bigler, Dr. John A.
 Billow, Miss Virginia
 Bird, Miss Frances
 Birk, Miss Amelia
 Bishop, Howard P.
 Bishop, Miss Martha V.
 Bittel, Mrs. Frank J.
 Bixby, Edward Randall
 Blackburn, Oliver A.
 Blair, Mrs. M. Barbour
 Blair, Wm. McCormick
 Blair, Wolcott
 Blatchford, Dr. Frank
 Wicks
 Blecker, Mrs.
 Michael, Jr.
 Blessing, Dr. Robert
 Block, Joseph L.
 Block, Leigh B.
 Block, Mrs. Leigh B.
 Block, Philip D., Jr.
 Bloss, Mrs. Sidney M.
 Bluford, Mrs. David
 Blum, Harry H.
 Blunt, J. E., Jr.
 Boal, Ayres
 Boal, Stewart
 Boericke, Mrs. Anna
 Boettcher, Arthur H.
 Bohasseck, Charles
 Bohrer, Randolph
 Bolotin, Hyman
 Bolten, Paul H.
 Bondy, Berthold
 Boomer, Dr. Paul C.
 Boone, Arthur
 Booth, George E.
 Borg, George W.
 Bori, Mrs. Albert V.
 Borland, Mrs. Bruce
 Borland, William F.
 Borowitz, David
 Borwell, Robert C.
 Bosch, Charles
 Bosch, Mrs. Henry
 Bosworth, Mrs.
 Roland I.
 Botts, Graeme G.
 Boulton, Mrs. Rudyerd
 Bousa, Dr. Bohuslav
 Bowen, Mrs. Louise
 DeKoven
 Bowers, Ralph E.
 Bowman, Mrs. E. M.
 Bowman, Johnston A.
 Boyack, Harry
 Boyd, Mrs. T. Kenneth
 Boynton, A. J.
 Boynton, Frederick P.
 Brach, Mrs. F. V.
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 Brainerd, Mrs. Arthur T.
 Bramble, Delhi G. C.
 Brandt, Charles H.
 Bransfield, John J.
 Brauer, Mrs. Paul
 Bremner, Mrs. David F.
 Brendecke, Miss June
 Brenner, S. L.
 Brennom, Dr. Elmo F.
 Brennwasser, S. M.
 Brenza, Miss Mary
 Breslin, Dr. Winston I.
 Brewer, Mrs. Angeline L.
 Breyer, Mrs. Theodor
 Bridges, Arnold
 Bristol, James T.
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 Brodribb, Lawrence C.
 Brodsky, J. J.
 Brostoff, Harry M.
 Brown, A. Wilder
 Brown, Mrs. C. H.
 Brown, Christy
 Brown, David S.
 Brown, Mrs. Everett C.
 Brown, John T.
 Brown, Dr. Joshua M.
 Brown, Mark A.
 Brown, Scott
 Brown, William F.
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 Bruhn, H. C.
 Brundage, Avery

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 Margaret A.
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 Bunge, Mrs. Albert J.
 Bunte, Mrs. Theodore W.
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 Burchmore, John S.
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 Burgweger, Mrs. Meta
 Dewes
 Burke, Webster H.
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 Burnham, Mrs. George
 Burns, Mrs. Randall W.
 Burry, William
 Bush, Earl J.
 Bush, Mrs. William H.
 Butler, Mrs. Hermon B.
 Butler, John M.
 Butler, Paul
 Butz, Theodore C.
 Butzow, Mrs. Robert C.
 Byrne, Miss Margaret H.

 Cahn, Dr. Alvin R.
 Cahn, Bertram J.
 Cahn, Morton D.
 Caine, John F.
 Caine, Leon J.
 Callender, Mrs.
 Joseph E.
 Calmeyn, Frank B.
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 Sophia C.
 Cameron, Dr. Dan U.
 Cameron, Will J.
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 Royce
 Campbell, Delwin M.
 Campbell, Herbert J.
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 Canman, Richard W.
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 Frederic Ives, Sr.

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 Carry, Joseph C.
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 Jeannette
 Carton, Alfred T.
 Carton, Laurence A.
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 Castle, Alfred C.
 Castruccio, Giuseppe
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 Cernoch, Frank
 Chandler, Henry P.
 Chapin, William Arthur
 Chapman, Arthur E.
 Chatain, Robert N.
 Cheney, Dr. Henry W.
 Chenier, Miss Mizpah
 Cheronos, George D.
 Cherry, Walter L., Jr.
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 Childs, Mrs. George W.
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 Clarke, Harley L.
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 Clemen, Dr. Rudolph A.
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 Clonick, Seymour E.
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 Coleman, Loring W.

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 Cox, William D.
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 Creange, A. L.
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 Crerar, Mrs. John
 Crilly, Edgar
 Cromwell, Miss Juliette
 Clara
 Crowley, C. A.
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 Paul
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 Danne, William C., Jr.
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 Davidson, Miss Mary E.
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 Davis, Don L.
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 Davis, Dr. Joseph A.
 Davis, Dr. Loyal
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 Charles W.
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 Porter
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 Dickinson, Robert B.
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 Dimmer, Miss
 Elizabeth G.
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 Warren
 Dobyons, Mrs. Henry F.
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 Donlon, Mrs. Stephen E.
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 Donnelley, Mrs. H. P.
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 Dornbusch, Charles H.
 Dorocke, Joseph, Jr.
 Dorschel, Q. P.
 Douglas, James H., Jr.
 Douglass, Kingman
 Douglass, Mrs. W. A.
 Dreutzer, Carl
 Drever, Thomas
 Dreyfus, Mrs. Moise
 Dubbs, C. P.
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 Dudley, Laurence H.
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 Duncan, Albert G.
 Duner, Joseph A.
 Dunlop, Mrs. Simpson
 Dunn, Samuel O.
 Durand, Mrs. N. E.
 Durbin, Fletcher M.

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 Eaton, J. Frank
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 Eckhart, Percy B.
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 Edwards, Miss Edith E.
 Edwards, Kenneth P.
 Egan, William B.
 Egloff, Dr. Gustav
 Eichengreen, Edmund K.
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 Eisenberg, Sam J.
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 Eisendrath, Miss Elsa B.
 Eisendrath, Robert M.
 Eisendrath, William B.
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 Eisenstein, Sol
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 Eitel, Max
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 Ellbogen, Miss Celia
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 Elliott, Frank R.
 Ellis, Howard
 Elting, Howard
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 Embree, J. W., Jr.
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 Ericsson, Dewey A.
 Ericsson, Walter H.
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 Evans, Mrs. David
 Evans, David J.
 Evans, Eliot H.

 Fabrice, Edward H.
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 Faherty, Roger
 Faithorn, Walter E.
 Falk, Miss Amy
 Fallon, Mrs. J. B.
 Fallon, Dr. W. Raymond
 Falls, Dr. A. G.
 Farnham, Mrs. Harry J.
 Farrell, Mrs. B. J.
 Farwell, John V., III
 Faulkner, Charles J.
 Faulkner, Miss Elizabeth
 Faurot, Henry, Jr.
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 Fay, Eugene C.
 Feiwell, Morris E.
 Felix, Benjamin B.
 Fellows, William K.

ASSOCIATE MEMBERS (Continued)

- Felsenthal, Edward
George
Fennekohl, Mrs.
Arthur C.
Fergus, Robert C.
Fernald, Robert W.
Ferry, Mrs. Frank F.
Fetzer, Wade
Filkins, A. J.
Fineman, Oscar
Finley, Max H.
Finnegan, Richard J.
Finnerud, Dr. Clark W.
Firsell, Maurice S.
Fischel, Frederic A.
Fish, Mrs. Helen S.
Fishbein, Dr. Morris
Fisher, Harry M.
Fisk, Mrs. Burnham M.
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Flavin, Edwin F.
Fleming, Mrs. Joseph B.
Florsheim, Harold M.
Florsheim, Irving S.
Florsheim, Mrs.
Milton S.
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Folsom, Mrs. William R.
Foote, Mrs. Harley T.
Forch, Mrs. John L., Jr.
Ford, Mrs. Willis Roland
Foreman, Mrs. Alfred K.
Foreman, Mrs. E. G.
Foreman, Edwin G., Jr.
Foreman, Harold E.
Forgan, James B.
Forgan, Mrs. J. Russell
Forgan, Robert D.
Forman, Charles
Forster, J. George
Fortune, Miss Joanna
Foster, Mrs. Charles K.
Fox, Jacob Logan
Fox, Dr. Paul C.
Franche, Mrs. D. C., III
Frank, Arthur A.
Frankel, Louis
Frankenstein, William B.
Frankenthal, Dr.
Lester E., Jr.
Franklin, Egington
Fraser, Mrs. George E.
Freedman, Dr. I. Val
Freeman, Charles Y.
Freiler, Abraham J.
French, Dudley K.
Frenier, A. B.
Freudenthal, G. S.
Frey, Charles Daniel
Frey, Henry J.
Fridstein, Meyer
Friedlich, Mrs. Herbert
- Friestedt, Arthur A.
Fuller, Mrs. Gretta
Patterson
Fuller, J. E.
Fuller, Judson M.
Furry, William S.
- Gabriel, Adam
Gaertner, William
Galgano, John H.
Gall, Charles H.
Gall, Harry T.
Gallup, Rockwell L.
Galt, Mrs. A. T.
Gamble, D. E.
Garcia, José
Garden, Hugh M. G.
Gardiner, Mrs. John L.
Gardner, Addison L.
Gardner, Addison L., Jr.
Gardner, Henry A.
Gardner, Mrs. James P.
Garen, Joseph F.
Garnett, Joseph B.
Garrison, Dr. Lester E.
Gates, Mrs. L. F.
Gawne, Miss Clara V.
Gay, Rev. A. Royal
Gear, H. B.
Gehl, Dr. W. H.
Gehrmann, Felix
Geiger, Alfred B.
Geiling, Dr. E. M. K.
Geittmann, Dr. W. F.
Gellert, Donald N.
Gensburg, Samuel H.
Gentry, Veit
Gentz, Miss Margaret
Nina
Gerber, Max
Gerding, R. W.
Gerngross, Mrs. Leo
Gettelman, Mrs.
Sidney H.
Gettleman, Frank E.
Getz, Mrs. James R.
Getzoff, E. B.
Gibbs, Richard F.
Gibson, Dr. Stanley
Gidwitz, Alan K.
Giffey, Miss Hertha
Gifford, Mrs.
Frederick C.
Gilchrist, Mrs. John F.
Gilchrist, Mrs. William
Albert
Giles, Carl C.
Giles, Mrs. Guy H.
Gillette, Mrs. Ellen D.
Gilmore, Dr. John H.
Gimbel, J. W., Jr.
Ginther, Miss Minnie C.
- Giryotas, Dr. Emelia J.
Glaescher, Mrs. G. W.
Glasner, Rudolph W.
Glasser, Joshua B.
Godehn, Paul M.
Goes, Mrs. Arthur A.
Goldberg, Philip S.
Golden, Dr. Isaac J. K.
Golding, Robert N.
Goldman, Mrs. Louis
Goldstein, Dr. Helen L.
Button
Goldstein, Nathan S.
Goldstine, Dr. Mark T.
Goldy, Walter I.
Goltra, Mrs. William B.
Goode, Mrs. Rowland T.
Gooden, G. E.
Goodman, Benedict K.
Goodman, Mrs. Milton F.
Goodman, W. J.
Goodman, William E.
Goodwin, Clarence
Norton
Goodwin, George S.
Gordon, Colin S.
Gordon, Harold J.
Gordon, Dr. Richard J.
Gordon, Mrs. Robert D.
Gorrell, Mrs. Warren
Gottlieb, Frederick M.
Gould, Jay
Gould, Mrs. June K.
Grade, Joseph Y.
Graff, Oscar C.
Graham, Douglas
Graham, E. V.
Graham, Miss
Margaret H.
Gramm, Mrs. Helen
Granger, Mrs. Lillian M.
Grant, James D.
Grant, John G.
Graves, Austin T.
Graves, Howard B.
Grawoig, Allen
Gray, Dr. Earle
Gray, Edward
Green, Michael
Green, Robert D.
Greenacre, Miss Cordelia
Ann
Greenburg, Dr. Ira E.
Greene, Henry E.
Greenlee, Mrs. William
Brooks
Greenman, Mrs. Earl C.
Gregory, Stephen S., Jr.
Gregory, Tappan
Gressens, Otto
Grey, Dr. Dorothy
Griest, Mrs. Marianna L.

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- Griffenhagen, Mrs.
Edwin O.
Griffith, Mrs. Carroll L.
Griffith, Mrs. William
Griswold, Harold T.
Grizzard, James A.
Groak, Irwin D.
Gronkowski, Rev. C. I.
Groot, Cornelius J.
Groot, Lawrence A.
Gross, Henry R.
Grossman, Frank I.
Grothenhuis, Mrs.
William J.
Grotowski, Mrs. Leon
Gruhn, Alvah V.
Grunow, Mrs. William C.
Guenzel, Louis
Guest, Ward E.
Gurley, Miss Helen K.
Gurman, Samuel P.
Gustafson, Gilbert E.
Guthman, Edwin I.
Gwinn, William R.
- Hadley, Mrs. Edwin M.
Haffner, Mrs.
Charles C., Jr.
Hagen, Mrs. Daise
Haight, George I.
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Hajicek, Rudolph F.
Haldeman, Walter S.
Hale, Mrs. Samuel
Hales, William M.
Hall, Edward B.
Hall, Mrs. J. B.
Halligan, W. J.
Hallmann, Herman F.
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George F.
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Rassweiler
Hardin, John H.
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Harper, Alfred C.
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Harris, David J.
- Harris, Gordon L.
Harris, Stanley G.
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Harvey, Richard M.
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Hass, G. C.
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Sherman
Hayakawa, Dr. S. I.
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Hayes, Harold C.
Hayes, Miss Mary E.
Haynie, Miss Rachel W.
Hays, Mrs. Arthur A.
Hayslett, Arthur J.
Hazlett, Dr. William H.
Hazlett, Mrs. William H.
Healy, Vincent Jerrems
Heaney, Dr. N. Sproat
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Heaton, Harry E.
Heaton, Herman C.
Heck, John
Hedberg, Henry E.
Heffernan, Miss Lili
Hefner, Adam
Heide, Mrs. Bernard H.
Heiman, Marcus
Heinzelman, Karl
Heinzen, Mrs. Carl
Heisler, Francis
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Heller, John A.
Heller, Mrs. Walter E.
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Henley, Dr. Eugene H.
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Henschel, Edmund C.
Herbst, LeRoy B.
Herrick, Charles E.
Herron, James C.
Herron, Mrs. Oliver L.
Hershey, J. Clarence
Hertz, Mrs. Fred
Hertzberg, Lawrence
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Herwig, William D., Jr.
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Hesse, E. E.
Heverly, Earl L.
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Eugene, Jr.
Hildebrand, Grant M.
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Hill, William E.
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Hillebrecht, Herbert E.
Hills, Edward R.
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Bertol
Hirsch, Jacob H.
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Hempstead
Hogan, Robert E.
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Holmes, Mrs. Maud G.
Holmes, William
Holmes, William N.
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Holt, McPherson
Holub, Anthony S.
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Homan, Miss Blossom L.
Honsik, Mrs. James M.
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Hoover, H. Earl
Hoover, Ray P.
Hope, Alfred S.
Hopkins, Albert L.
Hopkins, Mrs. James M.
Hopkins, Mrs.
James M., Jr.
Horchner, William W.

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Horween, Isidore
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Howe, Clinton W.
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Layman
Howe, Ralph B.
Howe, Roger F.
Howes, Mrs. Frank W.
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Howse, Richard G.
Howson, Louis R.
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Huber, Dr. Harry Lee
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Hudson, Walter L.
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Huncke, Oswald W.
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Hurd, Ferris E.
Hurvitz, H. R.
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Hust, George
Huszagh, Ralph D.
Hutchinson, Foye P.
Hutchinson, Samuel S.
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- Ickes, Raymond W.
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Illich, George M., Jr.
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Inlander, N. Newton
Inlander, Samuel
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Jacobi, Miss Emily C.
Jacobs, Julius
Jacobs, Mrs. Walter H.
Jacobs, Whipple
Jacobson, Raphael
James, Walter C.
Jameson, Clarence W.
Jancosek, Thomas A.
Janson, Dr. C. Helge M.
Janusch, Fred W.
Jarchow, Mrs. C. E.
Jarchow, Charles C.
Jarow, Harry W.
Jeffreys, Mrs. Mary M.
Jeffries, Dr. Daniel W.
Jenkins, David F. D.
Jenkinson, Mrs. Arthur
Gilbert
Jennings, Ode D.
Jerger, Wilbur Joseph
Jetzinger, David
Jirgal, John
Jirka, Dr. Frank J.
John, Dr. Findley D.
Johnson, Dr. Adelaide
Johnson, Alvin O.
Johnson, Calmer L.
Johnson, Mrs. Harley
Alden
Johnson, Joseph M.
Johnson, Nels E.
Johnson, Mrs. O. W.
Johnson, Olaf B.
Johnson, Philip C.
Johnston, Edward R.
Johnston, Miss Fannie S.
Johnston, Mrs. Hubert
McBean
Johnston, Mrs. M. L.
Jolly, Miss Eva Josephine
Jonak, Frank J.
Jones, Albert G.
Jones, Mrs. C. A.
Jones, James B.
Jones, Dr. Margaret M.
Jones, Melvin
Jones, Miss Susan E.
Joseph, Mrs. Jacob G.
Joseph, Louis L.
Joy, Guy A.
Judson, Clay
Juergens, H. Paul
Julien, Victor R.
- Kahn, Mrs. Arthur S.
Kahn, J. Kesner
Kahn, Jerome J.
- Kahn, Louis
Kaine, James B.
Kamins, Dr. Maclyn M.
Kane, Jerome M.
Kanter, Jerome J.
Kaplan, Morris I.
Kaplan, Nathan D.
Kasch, Frederick M.
Katz, Mrs. Sidney L.
Katz, Solomon
Katzenstein, Mrs.
George P.
Katzin, Frank
Kauffman, Mrs. R. K.
Kauffmann, Alfred
Kaufman, Justin
Kaufmann, Dr.
Gustav L.
Kavanagh, Clarence H.
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Keefe, Mrs. George I.
Kehl, Robert Joseph
Kehoe, Mrs. High Boles
Keith, Stanley
Keith, Mrs. Stanley
Kelker, Rudolph F., Jr.
Kelly, Mrs. Haven Core
Kelly, Miss Katherine
Marjorie
Kelly, William J.
Kemper, Hathaway G.
Kemper, Miss Hilda M.
Kempner, Harry B.
Kempner, Stan
Kendall, Mrs. Virginia H.
Kendrick, John F.
Kennedy, Mrs. E. J.
Kennedy, Lesley
Kennelly, Martin H.
Kenney, Clarence B.
Kent, Dr. O. B.
Keogh, Gordon E.
Kern, Mrs. August
Kern, H. A.
Kern, Dr. Nicholas H.
Kern, Trude
Kerwin, Edward M.
Kesner, Jacob L.
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Kettering, Mrs.
Eugene W.
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Kiessling, Mrs. Charles S.
Kile, Miss Jessie J.
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Kimball, William W.
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Kinsey, Robert S.

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Weymouth
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Kleinpell, Dr. Henry H.
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Kleutgen, Dr. Arthur C.
Klinetop, Mrs. Charles W.
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Paula
Knopf, Andrew J.
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Koch, Raymond J.
Koch, Robert J.
Kochs, August
Kochs, Mrs. Robert T.
Koehnlein, Wilson O.
Kohler, Eric L.
Konsberg, Alvin V.
Kopf, Miss Isabel
Koppenaar, Dr.
Elizabeth Thompson
Kornblith, Mrs.
Howard G.
Kosobud, William F.
Kotal, John A.
Kotin, George N.
Koucky, Dr. J. D.
Kovac, Stefan
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Kraft, C. H.
Kraft, James L.
Kraft, John H.
Kraft, Norman
Kralovec, Emil G.
Kralovec, Mrs. Otto J.
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Kraus, Samuel B.
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Kretschmer,
Herman L., Jr.
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Krost, Dr. Gerard N.
Kuehn, A. L.
Kuh, Mrs. Edwin J., Jr.
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Kuhn, Dr. Hedwig S.
Kunka, Bernard J.
Kunstadter, Albert
Kunstadter, Sigmund W.
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Kurtzon, Morris

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Lane, Ray E.
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Langenbach, Mrs. Alice R.
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Robert E.
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Tayloe
Langworthy, Benjamin
Franklin
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Lansinger, Mrs. John M.
Larimer, Howard S.
Larsen, Samuel A.
Larson, Mrs. Sarah G.
Lasker, Albert D.
Lassers, Sanford B.
Latshaw, Dr. Blair S.
Lauren, Newton B.
Lautmann, Herbert M.
Lavers, A. W.
Lavezzorio, Mrs. J. B.
Lavidge, Arthur W.
Law, Mrs. Robert O.
Lawless, Dr. Theodore K.
Lawson, David A.
Lax, John Franklin
Layden, Michael J.
Lazar, Maurice
Lazear, George C.
Leahy, James F.
Leahy, Thomas F.
Leavell, James R.
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Lebold, Samuel N.
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Leslie, John Woodworth
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Robert
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Levitets, Nathan

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Long, William E.
Loomis, Reamer G.
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Lueder, Arthur C.
Lunding, Franklin J.
Luria, Herbert A.
Lusk, R. R.
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Lyon, Charles H.

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Mackinson, Dr. John C.
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Donald
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Martin, George F.
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Martin, Wells
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Marx, Frederick Z.
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Marzola, Leo A.
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Mayer, Oscar G.
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Chauncey
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McCormick, Howard H.
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Robert H., Jr.
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McCready, Mrs. E. W.
McCreight, Louis Ralph
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McDonald, E. F., Jr.
McDonald, Lewis
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McGraw, Max
McGuinn, Edward B.
McGurn, Matthew S.
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Walter G.
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R., Sr.
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McMillan, John
McMillan, W. B.
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Melnick, Leopold B.
Merrell, John H.
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Merrill, William W.
Metz, Dr. Arthur R.
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Meyer, Abraham W.
Meyer, Dr. Charles A.
Meyer, Charles Z.
Meyerhoff, A. E.
Meyers, Erwin A.
Meyers, Jonas
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Midowicz, C. E.
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Miller, Hyman
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Beaupre
Miller, Oscar C.
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Mills, Lloyd Langdon
Miner, Dr. Carl S.
Minturn, Benjamin E.
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Mitchell, John J.
Mitchell, Leeds
Mitchell, Oliver
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Mong, Mrs. C. R.
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Monroe, William S.
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Moore, Philip Wyatt
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Morey, Dr. Charles W.
Morf, F. William
Morrison, Mrs. C. R.
Morrison, Mrs. Harry
Morrison, James C.
Morrow, Mrs. John, Jr.
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Morse, Leland R.
Morse, Mrs. Milton M.
Morse, Robert H.
Morton, Sterling
Morton, William Morris
Moses, Howard A.
Moss, Jerome A.
Mouat, Andrew J.
Moxon, Dr. George W.
Moyer, E. J. T.
Moyer, Mrs. Paul S.
Mudge, Mrs. John B.
Muehlstein, Mrs. Charles
Mueller, Austin M.
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Mueller, J. Herbert
Mueller, Paul H.

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- Mulford, Miss Melinda Jane
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 Munroe, Moray
 Murphy, Joseph D.
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 Murphy, Robert E.
 Muszynski, John J.
 Myrland, Arthur L.
- Naber, Henry G.
 Nadler, Dr. Walter H.
 Naess, Sigurd E.
 Nagel, Mrs. Frank E.
 Nance, Willis D.
 Naumann, Miss Susan
 Nebel, Herman C.
 Neely, Mrs. Lloyd F.
 Nehls, Arthur L.
 Nellegar, Mrs. Jay C.
 Nelson, Arthur W.
 Nelson, Charles G.
 Nelson, Donald M.
 Nelson, Victor W.
 Neuman, Sidney
 Neumann, Arthur E.
 Newberger, Joseph Michael
 Newhall, R. Frank
 Newhouse, Karl H.
 Newman, Mrs. Albert A.
 Newman, Charles H.
 Nichols, J. C.
 Nichols, S. F.
 Nilsson, Mrs.
 Goodwin M.
 Nishkian, Mrs.
 Vaughn G.
 Nitze, Mrs. William A.
 Noble, Samuel R.
 Nollau, Miss Emma
 Noonan, Edward J.
 Norman, Harold W.
 Norris, Mrs. Lester
 Norton, Christopher D.
 Norton, R. H.
 Novak, Charles J.
 Noyes, A. H.
 Noyes, Allan S.
 Noyes, Mrs. May Wells
 Nufer, Gene
 Nusbaum, Mrs.
 Hermien D.
 Nyman, Dr. John Egbert
- Oates, James F.
 Oberfelder, Herbert M.
 Oberfelder, Walter S.
 Obermaier, John A.
 O'Brien, Miss Janet
- O'Connell, Edmund Daniel
 Odell, William R., Jr.
 Offield, James R.
 Oglesbee, Nathan H.
 O'Keefe, Mrs. Dennis D.
 O'Keefe, William F.
 Olaison, Miss Eleanor O.
 Oldberg, Dr. Eric
 Oldefest, Edward G.
 Oleson, Wrisley B.
 Oliver, Mrs. Paul
 Olsen, Miss Agnes J.
 Olsen, Mrs. Arthur O.
 Olson, Gustaf
 Olson, Rudolph J.
 O'Neil, Dr. Owen
 Onofrio, Mrs. Michael J.
 Ooms, Casper William
 Opeka, Frank M.
 Oppenheimer, Mrs.
 Harry D.
 Orndoff, Dr. Benjamin H.
 O'Rourke, Albert
 Orr, Mrs. Robert C.
 Orr, Thomas C.
 Orthal, A. J.
 Ortmyer, Dr. Marie
 Osborn, Theodore L.
 Ostrom, Mrs. J. Augustus
 Otis, J. Sanford
 Otis, Joseph E.
 Otis, Joseph Edward, Jr.
 Otis, Stuart Huntington
 Owings, Mrs.
 Nathaniel A.
- Paasche, Jens A.
 Packard, Dr. Rollo K.
 Paepcke, Walter P.
 Page, John W.
 Palmer, James L.
 Palmgren, Mrs.
 Charles A.
 Pandaleon, Costa A.
 Pardee, Harvey S.
 Pardridge, Mrs. E. W.
 Park, R. E.
 Paker, Dr. Gaston C.
 Paker, Norman S.
 Parker, Troy L.
 Parks, C. R.
 Parmelee, Dr. A. H.
 Parry, Mrs. Norman G.
 Partridge, Lloyd C.
 Paschen, Mrs. Henry
 Pashkow, A. D.
 Patterson, Grier D.
 Patterson, Mrs. L. B.
 Patterson, Mrs. Wallace
 Patzelt, Miss Janet
 Peabody, Howard B.
- Peabody, Miss Susan W.
 Pearl, Allen S.
 Pearce, Langdon
 Pearson, F. W.
 Pearson, George
 Albert, Jr.
 Peck, Dr. David B.
 Peirce, Albert E.
 PenDell, Charles W.
 Percy, Dr. Mortimer
 Nelson
 Perel, Harry Z.
 Perkins, A. T.
 Perkins, Mrs. Herbert F.
 Perry, Mrs. I. Newton
 Peter, William F.
 Peters, Harry A.
 Petersen, Elmer M.
 Petersen, Jurgen
 Peterson, Arthur J.
 Peterson, Axel A.
 Peterson, Mrs. Bertha I.
 Peterson, Mrs.
 Richard E.
 Pfaelzer, Miss
 Elizabeth W.
 Pflaum, A. J.
 Pflock, Dr. John J.
 Phelps, Mrs. W. L.
 Phillips, Dr. Herbert
 Morrow
 Phillips, Mervyn C.
 Pick, Albert, Jr.
 Pick, Frederic G.
 Pierce, J. Norman
 Pierce, Paul, Jr.
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 Rhodes
 Pierson, Joseph B.
 Pink, Mrs. Ira M.
 Pirie, Mrs. John T.
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 Plapp, Miss Doris A.
 Platt, Edward Vilas
 Platt, Mrs. Robert S.
 Plummer, Comer
 Plunkett, William H.
 Pobloske, Albert C.
 Podell, Mrs. Beatrice
 Hayes
 Polk, Mrs. Stella F.
 Pollak, Charles A.
 Poole, Mrs. Marie R.
 Poor, Fred A.
 Pope, Herbert
 Poppenhagen, Henry J.
 Porter, Charles H.
 Porter, Edward C.
 Porter, Mrs. Frank S.
 Porter, Henry H.
 Porter, Louis
 Porter, Mrs. Sidney S.

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- Portis, Dr. Sidney A.
 Post, Mrs. Philip Sidney
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 Poulson, Mrs. Clara L.
 Powills, Michael A.
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 Prentice, John K.
 Price, John McC.
 Primley, Walter S.
 Prince, Mrs. Arthur C.
 Prince, Harry
 Prince, Rev. Herbert W.
 Prince, Leonard M.
 Pritchard, Richard E.
 Probst, Marvin G.
 Proxmire, Dr.
 Theodore Stanley
 Prussing, Mrs. R. E.
 Pucci, Lawrence
 Puckey, F. W.
 Purcell, Joseph D.
 Purcey, Victor W.
 Putnam, Miss Mabel C.
 Puttkammer, E. W.
 Pyterek, Rev. Peter H.
- Quick, Miss Hattiemae
- Raber, Franklin
 Racheff, Ivan
 Radford, Mrs. W. A., Jr.
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 Raff, Mrs. Arthur
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 Rathje, Frank C.
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 Howard D.
 Razim, A. J.
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 Redmond, Forrest H.
 Reed, Mrs. Frank D.
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 Reed, Norris H.
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 Regensteiner, Theodore
 Regnery, Frederick L.
 Regnery, William H.
 Reid, Mrs. Bryan
 Reilly, Vincent P.
- Reingold, J. J.
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 Renaldi, George J.
 Renshaw, Mrs. Charles
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 Howard, Jr.
 ReQua, Haven A.
 Rew, Mrs. Irwin
 Reynolds, Mrs.
 G. William
 Reynolds, Harold F.
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 Rice, Laurence A.
 Rich, Elmer
 Rich, Harry
 Richards, Mrs. Bartlett
 Richards, Donald
 Richards, Marcus D.
 Richardson, George A.
 Richardson, Guy A.
 Richter, Mrs. Adelyn W.
 Ridgeway, Ernest
 Rieser, Leonard M.
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 Rietz, Walter H.
 Ripstra, J. Henri
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 Rittenhouse, Charles J.
 Roberts, Mrs. John
 Roberts, John M.
 Roberts, Shepherd M.
 Roberts, William
 Munsell
 Robertson, Hugh
 Robinson, Sanger P.
 Robinson,
 Theodore W., Jr.
 Robson, Miss Sarah C.
 Roderick, Solomon P.
 Rodgers, Dr. David C.
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 Clifford
 Rodman, Mrs. Hugh
 Roehling, Mrs. Otto G.
 Roehm, George R.
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 Rogerson, Everett E.
 Roggenkamp, John
 Rogovsky, W. P.
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 Rolnick, Dr. Harry C.
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 Rosborough, Dr. Paul A.
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 Rosenbaum, Mrs.
 Edwin S.
 Rosenbaum, Mrs.
 Harold A.
 Rosenfeld, M. J.
- Rosenfield, Mrs.
 Morris S.
 Rosenstone, Nathan
 Rosenstone, Samuel
 Rosenthal, Kurt
 Rosenthal, Samuel R.
 Rosenwald, Richard M.
 Ross, Joseph F.
 Ross, Robert C.
 Ross, Mrs. Robert E.
 Ross, Thompson
 Ross, Walter S.
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 Roth, Mrs. Margit
 Hochsinger
 Rothacker, Watterson R.
 Rothschild, George
 William
 Routh, George E., Jr.
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 Rubovits, Theodore
 Ruettinger, John W.
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 Donald M.
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 Sargent, Ralph
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 Sawyer, Dr. Alvah L.
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 Schafer, O. J.
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 Schaffner, Mrs. L. L.
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- Schneider, F. P.
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 Schroeder, Dr. George H.
 Schroeder, Dr. Mary G.
 Schueren, Arnold C.
 Schukraft, William
 Schulze, Mrs. Mathilde
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 Schutz, Thomas A.
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 Daniel J., Jr.
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 Schwartz, Charles P.
 Schwartz, Dr. Otto
 Schwarz, Herbert E.
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 Scott, Robert L.
 Scribner, Gilbert
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 Sears, J. Alden
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 Seaverns, Louis C.
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 Seeburg, Justus P.
 Segal, Victor
 Seifert, Mrs. Walter J.
 Seip, Emil G.
 Seipp, Clarence T.
 Seipp, Edwin A., Jr.
 Seipp, William C.
 Sello, George W.
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 Senne, John A.
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 Shakman, James G.
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 Shanesy, Ralph D.
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 DeWitt
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 Sieck, Herbert
 Siegel, David T.
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 Sigman, Leon
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 Silberman, David B.
 Silberman, Hubert S.
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 Sincere, Henry B.
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 Siragusa, Ross D.
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 Skarrn, Kenneth W.
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 Dunlap
 Smith, Harold Byron
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 Dunlap
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 Katharine Walker
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 Smith, Paul C.
 Smith, Samuel K.
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 White
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 Smith, Z. Erol
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 Nice, Dr. Leonard B.
 Nicholson, Dr. F. M.
 Nickell, H. K.
 Nikopoulos, George A.
 Nisen, Charles M.
 Noble, Daniel E.
 Noble, Guy L.
 Noble, Robert L.
 Nolte, Mrs. Charles B.
 Norby, H. L.
 Norman, Gustave
 Norris, Mrs. James
 North, Mrs. F. S.
 North, Harold F.
 Norton, G. A.
 Noyes, W. Hamilton
 Nygren, Henry C.

 Oberfelder, Joseph H.
 Oberhelman, Dr.
 Harry A.
 O'Brien, Donald J.
 O'Brien, M. J.
 Ochsner, Dr. Edward H.
 O'Connor, John J.
 O'Hair, R. C.
 O'Haire, Harry J.
 O'Hara, Arthur J.
 O'Keefe, John F.
 Oleson, Philip H.
 Olin, Edward L.
 Oliver, Dr. Marguerite
 Oliver, Dr. Richard M.
 Olsen, Andrew P.
 Olsen, Dr. Charles W.
 Olsen, Oscar W.
 Olsen, Sigurd
 Olson, Albert M.
 Olson, Benjamin Franklin
 Olson, H. Edsall
 Omara, E. H.
 O'Neill, Dr. Eugene J.
 O'Neill, J. Vincent
 Oppenheimer, Dr. Leo
 Orr, Hunter K.

 Orstrom, Albert Z.
 Osanai, Mrs. Mary M.
 Osborne, W. Irving, Jr.
 Ossendorff, Dr. K. W.
 Ostrander, E. L.
 O'Sullivan, James J.
 Otto, Walter C.
 Owen, Mrs. Ralph W.
 Owens, Harry J.

 Pace, Anderson
 Pacer, T. S.
 Pacholke, Fred
 Padour, Dr. Frank J.
 Painter, Miss Marguerite
 Pallasch, Paul V.
 Palm, Felix
 Palmerton, Miss R.
 Parker, Austin H.
 Parker, E. A.
 Parker, Miss Edith P.
 Parker, Lee N.
 Parrott, George H.
 Paschal, John William
 Patterson, W. A.
 Patterson, William F.
 Patti, Dr. Angelo R.
 Patton, A. E.
 Patton, Ralph E.
 Paul, Albert W.
 Paul, Benjamin R.
 Pauley, Clarence O.
 Paulus, Mrs. Max G.
 Payson, Randolph
 Peabody, Mrs.
 Stuyvesant
 Peachner, Mrs. D. J.
 Pearce, Charles S.
 Pearson, Miss Agnes M.
 Pearson, Edwin E.
 Pearson, Miss Kathleen
 Peck, Miss Constance L.
 Peck, Nelson C.
 Pederson, Alfred S.
 Peirce, Mrs. Clarence A.
 Pencik, Mrs. Miles F.
 Penner, Louis L.
 Penner, Samuel
 Pepich, Stephen T.
 Peponis, Arthur H.
 Perlman, Dr. Henry B.
 Perlman, I. B.
 Perlstein, Mrs. Harris
 Perreault, Earl E.
 Perry, Mrs. Joseph Sam
 Person, Dr. Allgot G.
 Peterkin, Daniel, Jr.
 Peters, Dr. Fredus N.
 Petersen, Lawrence A.
 Peterson, H. R.
 Peterson, V. W.
 Pettibone, Holman D.

 Pettingell, C. D.
 Pettinger, Andrew
 Pfaelzer, Mrs. Monroe
 Pflager, Charles W.
 Phelps, Erastus R.
 Phelps, William Henry
 Phoenix, George E.
 Pickering, John E.
 Pier, H. M.
 Piers, Dr. Gerhart
 Pike, Wayne S.
 Pillsbury, Mrs. Charles S.
 Pirofalo, James C.
 Pitt, A. A.
 Pletz, S. R.
 Plocek, J. Louis
 Plummer, Daniel C., Jr.
 Plunkett, Paul M.
 Pollard, Willard L.
 Pollock, Mrs. Lewis J.
 Pond, Mrs. Harold M.
 Pontius, Mrs. G. V.
 Poole, Arthur B., Jr.
 Poore, Robert W.
 Pope, George J.
 Pope, Mrs. Henry, Jr.
 Pope, Sidney T.
 Porter, Dr. George J.
 Portis, Henry R.
 Post, Myron H.
 Potter, Howard I.
 Potts, Albert W.
 Pound, G. C.
 Power, John W.
 Powers, William F.
 Praeger, Charles H.
 Pratt, Rev. Cuthbert
 Pratt, Jacob C., Jr.
 Pray, Max
 Preble, Robert C.
 Preikschat, Raymond W.
 Press, Robert M.
 Presson, Gerald
 Preston, Charles D.
 Preston, Dr. Frederick W.
 Price, Allen H.
 Price, Frederick J.
 Price, Griswold A.
 Price, Owen N.
 Prince, William Wood
 Prindiville, James A.
 Pritchard, N. H.
 Pritzker, Mrs. Jack
 Proby, Dr. Edmund A.
 Pruitt, Raymond S.
 Puestow, Dr. Charles B.
 Purdy, Donald
 Purdy, J. D.
 Purdy, John P.
 Purinton, Dr. Robert F.
 Puzey, Russell V.

ANNUAL MEMBERS (Continued)

Quam, James P.
 Quan, John B.
 Querl, E. P.
 Quetsch, L. J.
 Quisenberry, T. E.
 Radack, Mrs.
 Dorothy W.
 Rappold, Samuel R.
 Rasmussen, Frank
 Rasmussen, L. M.
 Rauh, Morris
 Ray, Harold R.
 Ray, Mrs. Herbert S.
 Raymond, Paul C.
 Rayner, Lawrence
 Reace, William T.
 Read, Freeman C.
 Ready, Charles H.
 Redding, George H.
 Reddy, Mrs. Philip J.
 Reed, Mrs. Frank C.
 Reed, L. F. B.
 Regan, Mrs. Ben
 Regnery, Mrs. Henry
 Reicin, Frank E.
 Reid, Alf F.
 Reilly, David J.
 Reilly, George A.
 Reilly, W. J.
 Rein, Lester E.
 Reiser, Miss Irene K.
 Remien, Miss Marie
 Katherine
 Render, Miss Forsythe
 Renken, Miss Martha
 Rentfro, Dr. Charles C.
 Replogle, Dr. Fred A.
 Ressler, Harold B.
 Reskin, Charles G.
 Reynolds, Milton
 Rice, Dr. Frank E.
 Rich, Keith
 Richards, Miss Irma L.
 Richards, Longley
 Richards, Oron E.
 Ricker, Jewett E.
 Ricks, Ivan
 Ridley, Mrs. E. N.
 Riedeman, H. T.
 Riggs, Mrs. Joseph A.
 Riley, John H.
 Rinaker, Samuel M.
 Ritso, Nicholas T.
 Rivenes, A. I.
 Rivera, J. A.
 Roach, O. R.
 Robandt, Al
 Robbins, Burr L.
 Robbins, Laurence B.
 Roberts, Harlow P.
 Roberts, J. K.
 Robertson, Egbert
 Robertson, Miss
 Nancy P.
 Robertson, Theodore B.
 Robinson, Thomas G.
 Robson, Mrs. Oscar
 Roche, Burke B.
 Roche, John Pierre
 Roddewig, Clair M.
 Roden, Carl B.
 Rodger, John H.
 Rodriguez, Dr. Arthur A.
 Rodwick, Frank P.
 Roefer, Henry A.
 Rogan, Walter E.
 Rogers, Mrs. Hopewell L.
 Rogers, Mrs. J. B.
 Rogers, Lester C.
 Rogers, Milton P.
 Rogers, Miss Suzanne
 Rogers, Thomas W.
 Roman, B. F.
 Ronayne, James F.
 Ronning, Magnus I.
 Roos, Edwin J.
 Rose, Ben
 Rose, George
 Rose, Jack
 Roseland, J. G.
 Rosenberg, Ben L.
 Rosenberg, Mrs.
 Bernhard
 Rosenfels, Mrs.
 Irwin S.
 Rosenson, Herzl
 Rosenthal, M. A.
 Ross, Dr. Chester John
 Ross, Earl
 Ross, Dr. Martin T.
 Ross, Mrs. Sophie S.
 Roth, Arthur J.
 Rowan, Mrs. Paul
 Rowe, F. B.
 Rowley, Fred C., Jr.
 Rowley, William F.
 Rozmarek, Charles
 Rubert, William F.
 Rubin, Edward P.
 Rudolph, Dr. A. H.
 Rudolph, Walter D.
 Ruehlmann, William R.
 Rugen, Fred A.
 Ruhl, Robert H.
 Ruhnke, George
 Runzel, William L., Jr.
 Ruskin, Mrs. Harry H.
 Russell, Harold S.
 Rutherford, M. Drexel
 Ryan, Daniel B.
 Ryan, P. F.
 Ryder, F. W.
 Ryerson, Anthony M.
 Saalfeld, Harry H.
 Saarinen, W.
 Sabin, Eben T.
 Sager, Mrs. S. Norman
 Salomon, Ira
 Saltiel, Dr. Thomas P.
 Salzman, Philip H.
 Sampson, H. R.
 Samuels, Benjamin
 Sanborn, Mrs. V. C.
 Sandel, Mrs. Clara
 Sandrok, Edward G.
 Sanfilippo, John
 SanFilippo, Dr. Paul D.
 Sang, Bernard G.
 Sang, Philip D.
 Sauerman, John A.
 Saunders, R. S.
 Sayers, Mrs. A. J.
 Sayers, Leon D.
 Sayre, Dr. Loren D.
 Scalbom, O. Trumbull
 Scalbom, Oscar L.
 Scarborough, Mrs. Henry
 Schaar, B. E.
 Schaefer, Fred A.
 Schaefer, W. A.
 Schaffner, Arthur B.
 Schaffner, Miss Marion
 Scheiner, Miss Clara A.
 Schiff, Max
 Schiltz, M. A.
 Schipfer, Dr. L. A.
 Schlatter, Miss Nina E.
 Schlichter, Dr. Jakub G.
 Schlossberg, Mrs. Harry
 Schlossman, Norman J.
 Schmidt, George A.
 Schmidt, Mrs.
 Siegfried G.
 Schmus, Elmer E.
 Schneider, Benjamin B.
 Schnering, P. B.
 Schnering, Robert B.
 Schnute, Dr. William J.
 Schoch, M. G.
 Schoeneberger, Charles A.
 Schonne, Mrs. Charles W.
 Schonthal, B. E.
 Schooler, Lee
 Schrader, John P.
 Schraeder, Harry H.
 Schrager, Charles L.
 Schroeder, Leo E.
 Schroeder, Werner W.
 Schuetz, Ralph E.
 Schulman, Harry
 Schultz, Chester H.
 Schultz, W. Norman
 Schultz, William H.
 Schulz, George H.
 Schulze, Paul, Jr.

ANNUAL MEMBERS (Continued)

- Schumaker, L. C.
 Schureman, Jean L.
 Schuttler, Mrs. Peter
 Schutz, Reuben M.
 Schwandt, Miss Erna
 Schwartz, A. A.
 Schwartz, Edward H.
 Schwartz, Joseph H.
 Schwartz, Leo J.
 Schwartz, Milton H.
 Schwartz, Nathan H.
 Schwarz, Fred M.
 Schwemm, Earl M.
 Sciaky, Sam
 Scofield, Clarence P.
 Scott, Mrs. Cortlandt N.
 Scott, Frederick H.
 Scott, George A. H.
 Scott, Mrs. Marion R.
 Scott, William Edouard
 Scott, Dr. Winfield W.
 Scovel, Harold F.
 Scrimgeour, Miss
 Gladys M.
 Scudder, Mrs. William M.
 Scully, Charles F.
 Seaberg, Edward R.
 Seaholm, A. T.
 Seaman, H. Gilbert
 Seaman, Henry L.
 Seaverns, George A., Jr.
 Secord, Burton F.
 Seder, A. R.
 Segal, Myron M.
 Selby, J. F.
 Selfridge, Calvin F.
 Sellers, Paul A.
 Selz, Frank E.
 Seneary, Dr. F. E.
 Serota, Dr. H. M.
 Sewell, Allen K.
 Sexton, Mrs. Thomas G.
 Shafer, Edward
 Shafer, Frederick C.
 Shafer, Walter S.
 Shalla, Dr. Leon S.
 Shaw, John I.
 Shaykin, Dr. Jacob B.
 Shearer, James, II
 Shedd, Mrs. Charles C.
 Shedd, Jeffrey
 Sheldon, Walter M., Jr.
 Sheridan, Leo J.
 Sherman, H. C.
 Sherman, Robert T.
 Shlopach, Wallace B.
 Short, William H.
 Shrader, Frank K.
 Shreve, C. E.
 Shuman, John R.
 Sibley, Joseph C., Jr.
 Siebel, George E.
 Sieber, Paul E.
 Sillani, Mrs. Mabel W.
 Silverstein, Milton
 Simpson, Bruce L.
 Sims, Frank S.
 Sims, Paul K.
 Sinaiko, Dr. Edwin S.
 Singer, Albert H.
 Singer, William A.
 Sinnerud, Dr. O. P.
 Sittler, Edwin C.
 Skirrow, Fred W.
 Sklar, N. Raoul
 Sklower, Miss Ruth I.
 Skoner, Chester
 Skudera, Mrs. Marie
 Slifka, George C.
 Slindee, Edward A.
 Sloan, William F.
 Sloup, Frank J.
 Smalley, B. L.
 Smalley, John H.
 Smart, David A.
 Smick, Robert W.
 Smith, George W.
 Smith, H. Kellogg
 Smith, Harold A.
 Smith, John F., Jr.
 Smith, Monroe A., Jr.
 Smith, Robert C.
 Smolka, Oscar J.
 Snideman, Richard L.
 Snite, John T.
 Snow, Lendol D.
 Snyder, Mrs. E. F.
 Sollitt, Mrs. Ralph T.
 Sollitt, Sumner S.
 Sommers, Bert Edward
 Soule, M. M.
 Spacek, Leonard P.
 Spark, David I.
 Spear, A. L.
 Speed, Dr. Kellogg
 Spencer, Arthur T.
 Spencer, William N.
 Spiegel, Dr. I. Joshua
 Spiegel, Miss
 Katherine J.
 Spiegel, Mrs. Philip
 Spielmann, Willson
 Spieth, Mrs. Angeline
 Sporrer, M. J.
 Springer, Clement F.
 Springsguth, Robert C.
 Staffel, Henry E.
 Staffebach, Earl T.
 Stagman, Dr. Joseph
 Stagman, Nathan
 Stahl, Harold A.
 Stahl, John J.
 Stahmer, George F., II
 Staller, Joseph H.
 Stamford, John
 Stanbery, J. N.
 Stannard, F. J.
 Stanton, Edgar, Jr.
 Stanton, Mrs. Francis R.
 Stanton, Lyman A.
 Starbuck, J. C.
 Starrett, Miss Carolyn J.
 Starshak, A. L.
 Staunton, E. C.
 Steen, Enoch
 Steen, Prof. Julian J.
 Steffen, Charles
 Steffey, D. Earl
 Stein, Mrs. S. Sidney
 Steins, Mrs. Halsey
 Steinwedell, William
 Stensland, T. N.
 Stephens, Paul
 Stern, David B., Jr.
 Stern, Herbert L.
 Stern, Herbert L., Jr.
 Stern, Jacob S.
 Steuer, Mrs. Joseph True
 Stevens, Mrs. Clement D.
 Stevens, George A.
 Stevens, Mrs.
 R. St. John
 Stevers, Martin D.
 Stewart, George R.
 Stewart, W. Ellis
 Stewart, William Scott
 Stiles, J. F., Jr.
 Stockton, Joseph D.
 Stoddard, Robert M.
 Stoddart, William M.
 Stolle, Arthur E.
 Stolp, John A.
 Stolz, Leon
 Stone, Dr. F. Lee
 Stone, Herbert Stuart, Jr.
 Stone, Mrs. J. S.
 Storey, Oliver W.
 Storkan, Mrs. James
 Stormont, Dr. D. L.
 Stout, Frederick E.
 Straka, Frank B.
 Stratton, Mrs. E. W.
 Stratton, Paul
 Stratton, Robert C.
 Straus, Mrs. Robert E.
 Stresenreuter, Mrs.
 Charles H.
 Strohmeier, Dr. Otto E.
 Stuart, Lyman J.
 Stuart, Robert K.
 Stuart, William M.
 Stuermer, Ray
 Stumes, Charles B.
 Sudler, Carroll H., Jr.
 Suyker, Hector
 Swain, David F.

ANNUAL MEMBERS (Continued)

- Sweet, Lisle W.
 Swift, Nathan B.
 Swift, T. Philip
 Sylvester, Edmund Q.
 Sylvester, Dr. Emmy
 Sylvester, Miss Maria P.
 Symonds, Merrill
 Szymanski, Dr.
 Frederick J.
- Talbot, Mrs. Eugene S.
 Tannenbaum, Dr.
 Karl H.
 Tarnopol, Emil
 Tarrson, Albert J.
 Tartak, Mrs. Gertrude C.
 Tatge, Paul W.
 Tatman, George R.
 Tauber, Stewart
 Taylor, Mrs. A. Thomas
 Taylor, Edward L.
 Taylor, Fitzhugh
 Taylor, George H.
 Taylor, Orville
 Taylor, Reuben C., Jr.
 Taylor, Mrs. Samuel G.
 Teichen, E. H.
 Templeton, Kenneth S.
 Temps, Leupold
 Teninga, Alfred J.
 Tenney, Henry F.
 Testin, Dr. Henry S.
 Teter, Park
 Thelen, Floyd E.
 Thiele, George C.
 Thillens, Melvin
 Thiry, George F.
 Thomas, G. Truman
 Thomas, Miss Martha
 Thompson, A. Mac
 Thompson, Mrs.
 Florence S.
 Thompson, Dr.
 Willard O.
 Thoren, Mrs. J. N.
 Thoresen, H. B.
 Thorson, Reuben
 Throop, Mrs. George
 Enos
 Timmings, G. H.
 Tippens, Mrs. Albert H.
 Todd, A.
 Tonk, Percy A.
 Toomin, Philip R.
 Topaz, Martin
 Topolinski, J. J.
 Torosian, Peter G.
 Toussaint, S. E.
 Trager, D. C.
 Trainor, H. J.
 Traub, A. C.
 Traut, Bernard H.
- Traver, George W.
 Traynor, William B.
 Traynor, William
 Knowlton
 Treffeisen, Gustave
 Tregenza, A. E.
 Trimarco, Ralph R.
 Troeger, Louis P.
 Trumbull, Mrs.
 Charles L.
 Trumbull, Robert F.
 Trumbull, William M.
 Turner, Dr. Herbert A.
 Turney, Russell J.
 Tuteur, Charles
 Tuteur, Irving M.
 Tyler, Thomas S.
 Tyrakowski, Steven S.
 Tyrrell, Miss Frances
- Ughetti, John B.
 Uhlmann, Richard F.
 Ullmann, S. E.
 Ultsch, W. Lewis
 Urban, Andrew
 Urban, Dr. H. J.
 Utley, Mrs. Clifton M.
- VanBuskirk, M. G.
 Vanderkloot, Dr. Albert
 VanderKloot, Nicholas J.
 Vanderwicken, Edwin P.
 VanDeventer, William E.
 VanDyk, S. A.
 VanKampen, A. H.
 VanMell, Herman T.
 VanNatta, V. R.
 VanNice, Errett
 VanSchaick, Mrs.
 Ethel R.
 Varty, Leo G.
 Vastine, Lee B.
 Vaughan, Alan W.
 Velvel, Charles
 Vilsoet, William
 Vloedman, Dr. D. A.
 Vogel, James B.
 Vogel, Mrs. Leslie H.
 Vogt, Earle E.
 Voltz, D. H.
 VonGehr, George
 Vose, Mrs. Frederic P.
 Vydra, Frank C.
- Wach, Dr. Edward C.
 Wachter, Frederick J.
 Wade, Albert G., II
 Wadler, Milton Arnold
 Wagner, Richard
 Wahl, Herman L.
 Waite, Roy E.
 Waldeck, Herman
- Waldman, Dr. Albert G.
 Walker, Dr. Alfred O.
 Walker, Frederick W., Jr.
 Walker, Reno R.
 Walker, Wendell
 Walker, Mrs. William
 Ernest
 Wall, Dr. Frank J.
 Wallenstein, Sidney
 Waller, William, Jr.
 Wallerstein, David B.
 Wallgren, Eric M.
 Walters, Gary G.
 Walz, John W.
 Wardwell, H. F.
 Ware, Mrs. Robert R.
 Ware, Willis C.
 Warner, Ernest N.
 Warner, Mason
 Washburn, Dr.
 Kenneth C.
 Wasserman, Hy
 Wasson, Theron
 Waterstreet, W. Neal
 Watkins, George H.
 Watling, John
 Watson, Norman E.
 Watt, Herbert J.
 Way, Mrs. Henry J.
 Weary, Allen M.
 Webb, Dr. Edward F.
 Webber, Harold H.
 Weber, James E.
 Webster, Dr. Augusta
 Webster, Frederick F.
 Webster, N. C.
 Wehmeier, H. A.
 Weidert, William C.
 Weigle, Mrs. Maurice
 Weiner, Charles
 Weinress, S. J.
 Weisbrod, Maxfield
 Weismantel, Miss
 Theresa A.
 Weiss, Alexander
 Weitman, W. E.
 Weitzel, Carl J.
 Welch, M. W.
 Welfeld, Marvin J.
 Wellin, Harold
 Wells, C. A.
 Wendt, Edwin H.
 Wenholz, Walter W.
 Wenninger, William C.
 Wescott, Dr. Virgil
 Wesley, C. N.
 West, James D.
 Westbrook, Charles H.
 Westerlin, Mrs. J. M.
 Wetmore, Horace O.
 Wetten, Walton
 Wezeman, Frederick H.

ANNUAL MEMBERS (Continued)

Wheeler, Mrs. Seymour	Willy, Gustave J.	Wright, William Ryer
Wheelock, Miss Ellen P.	Wilmarth, Donald G.	Wrisley, George A.
Whipple, Gaylord C.	Wilson, Allen B.	Wyatt, Harry N.
Whipple, Mrs. M. Cox	Wilson, Arlen J.	Wybel, L. E.
Whipple, Miss Velma D.	Wilson, H. Fred	Wyckoff, Dr. Philip H.
Whiston, Frank M.	Wilson, Percival C.	
Whitlock, John B.	Wilson, Dr. William	Yates, John E.
Whitfield, George B.	Windchy, Mrs. Frederick O.	Yohe, C. Lloyd
Whitmore, Lyle S.	Winsberg, Herbert H.	Yonkers, Edward H., Jr.
Whitnell, William W.	Winsberg, Samuel	Youker, Mrs. Claude W.
Whitney, Mrs. Charles R.	Winston, Charles S., Jr.	Young, C. S.
Wible, R. R.	Winston, Mrs. Farwell	Young, Dr. Donald R.
Wickersham, Mrs. Lucille	Winterbotham, John R.	Young, J. L.
Wickman, C. E.	Wiseman, William P.	Youngberg, Arthur C.
Wilbur, Lawrence S.	Wisner, C. V., Jr.	Youngren, W. W.
Wilby, A. C.	Wolchina, R. P.	
Wilds, John L.	Wolf, Morris E.	Zaczek, Miss Genevieve A.
Wilhite, James A.	Wolf, Orrin E.	Zadek, Milton
Wilk, Arthur E.	Wolfe, Hubert J.	Zatz, Sidney R.
Wilkinson, William D.	Wolff, Frank C.	Zehr, Ores E.
Willard, Nelson W.	Wolff, Oscar M.	Zimmer, Harry L.
Williams, Albert W.	Wood, Edward W.	Zimmerman, Austin M.
Williams, Jay C.	Wood, William A.	Zimmerman, Carl
Williams, Lawrence	Woodside, John T.	Zimmerman, E. W.
Williams, Robert G.	Woodson, William T.	Zimmerman, Dr. Harold W.
Williams, Russell V.	Woodward, Arthur H.	Zimmerman, Preston
Willis, Ivan L.	Woodyatt, Dr. Rollin Turner	Zimmermann, Mrs. P. T.
Willott, Mrs. Adele	Woolard, Francis C.	Zipse, Edwin W.
	Woolf, Lawrence A.	Zitzewitz, Arthur F.
	Woulfe, Henry F.	Zolla, Abner M.

DECEASED, 1951

Agar, Mrs. John T.	Hoefer, Max	Ritter, Miss Lavinia
Beaven, Joseph C.	Kidwell, Richard E.	
Carpenter, John Alden	Low, John M.	Stoehr, Kurt
Cervenka, John A.	McGuire, F. Willis	Storms, North
Cole, Cornelius C.	McHenry, Irving	Stresen-Reuter, Frederick A.
Dahl, William G.	McLaughlin, A. G.	Symmes, William H.
Douglas, William C.	Meyer, Mrs. Alfred C.	
Duval, Dr. Emile C.	Novotny, Richard R.	Wallace, Charles Ross
Foster, George P.	O'Hearn, Rev. John J.	Watkins, Frank A.
		Wanzer, Howard H.
		Weiler, C. J.

Articles of Incorporation

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer

Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
 COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

[SEAL] G. R. MITCHELL,
 NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 15th day of November, 1943, the name of FIELD MUSEUM OF NATURAL HISTORY was changed to CHICAGO NATURAL HISTORY MUSEUM. A certificate to this effect was filed November 23, 1943, in the office of the Secretary of State for Illinois.

Amended By-Laws

DECEMBER, 1945

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board,

become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the Member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures and entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change

of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants, signed by such officer, or officers, or other persons as the Board of Trustees may from time to time designate.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of the Chicago Natural History Museum, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of the Chicago Natural History Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology—each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of not less than five or more than seven members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to make and alter investments from time to time, reporting its actions to the Board of Trustees. The Finance Committee is fully authorized to cause any funds or investments of the Corporation to be made payable to bearer, and it is further authorized to cause real estate of the Corporation, its funds and investments, to be held or registered in the name of a nominee selected by it.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

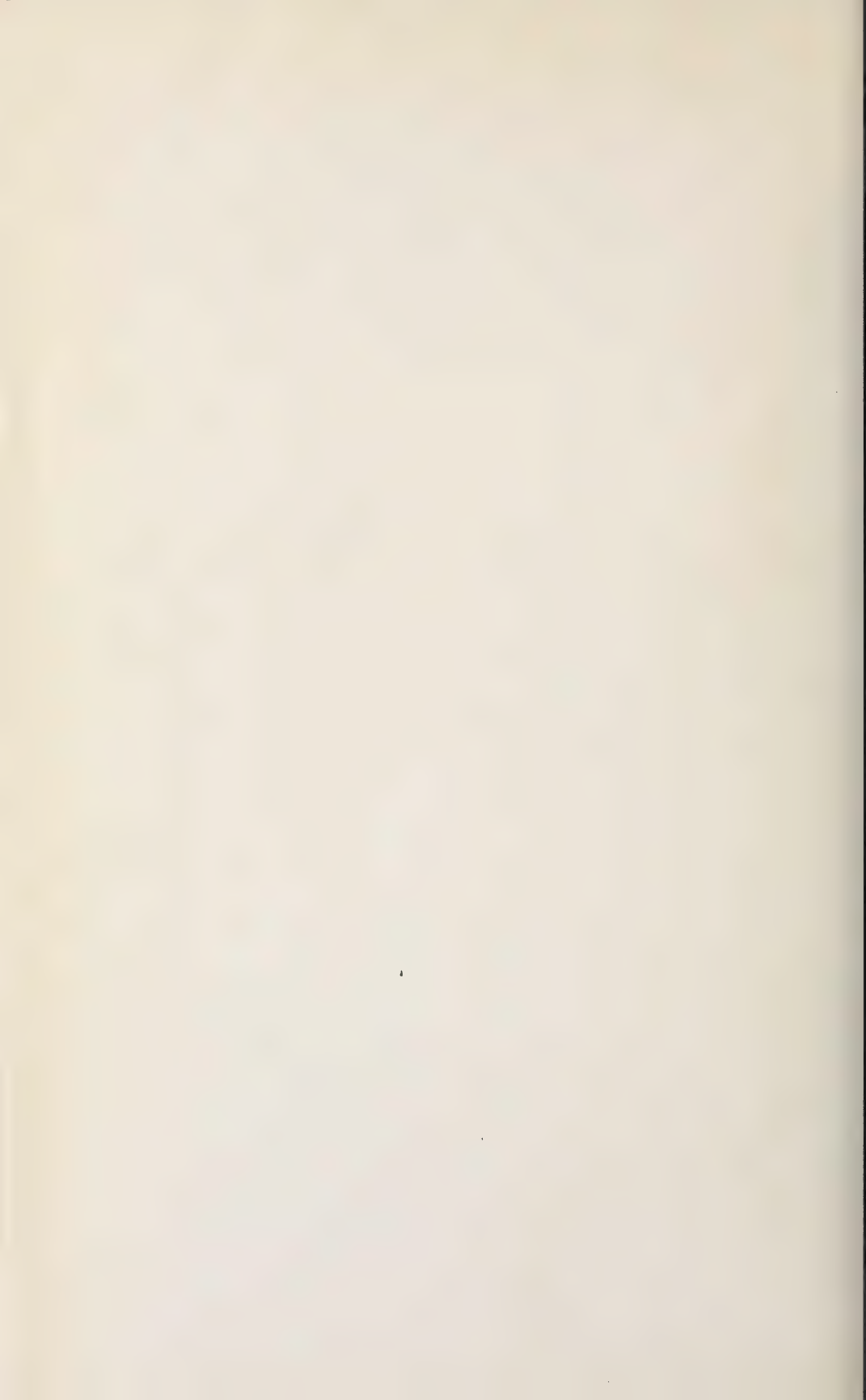
SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

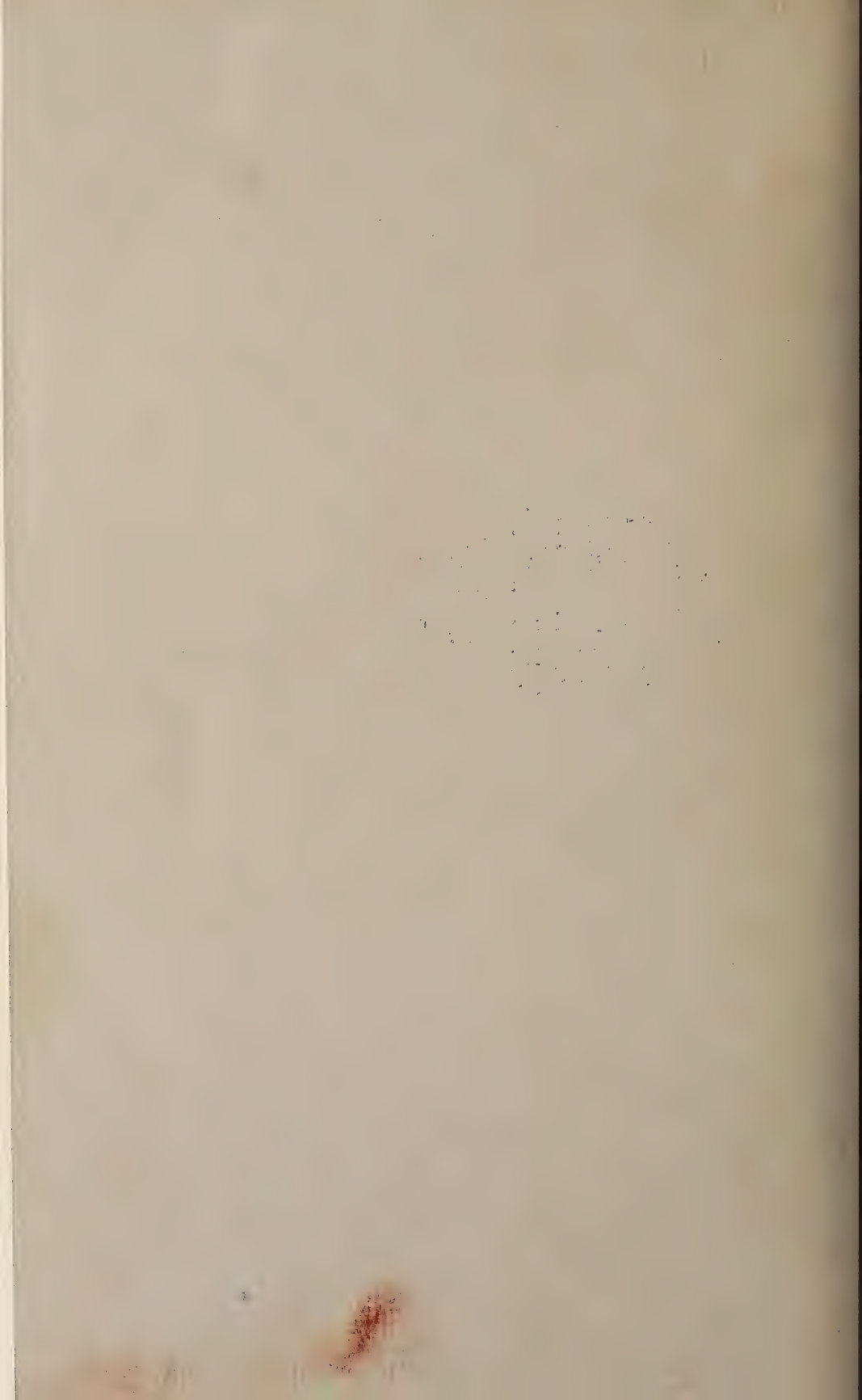
ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. The By-Laws, and likewise the Articles of Incorporation, may be amended at any regular meeting of the Board of Trustees by a vote in favor thereof of not less than two-thirds of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.







BAE 5-639

ANNUAL REPORT

1952



Chicago Natural History Museum







Allen, Gordon, Schroepel and Redlich, Inc.

LEOPOLD E. BLOCK
1869-1952

Member of the Board of Trustees since 1936
Member of the Finance Committee
Corporate Member, Life Member, and Contributor

CHICAGO NATURAL HISTORY MUSEUM

Report of the Director

to the

Board of Trustees

for the year 1952



CHICAGO, ILLINOIS

1953

PRINTED IN THE UNITED STATES OF AMERICA
BY CHICAGO NATURAL HISTORY MUSEUM PRESS

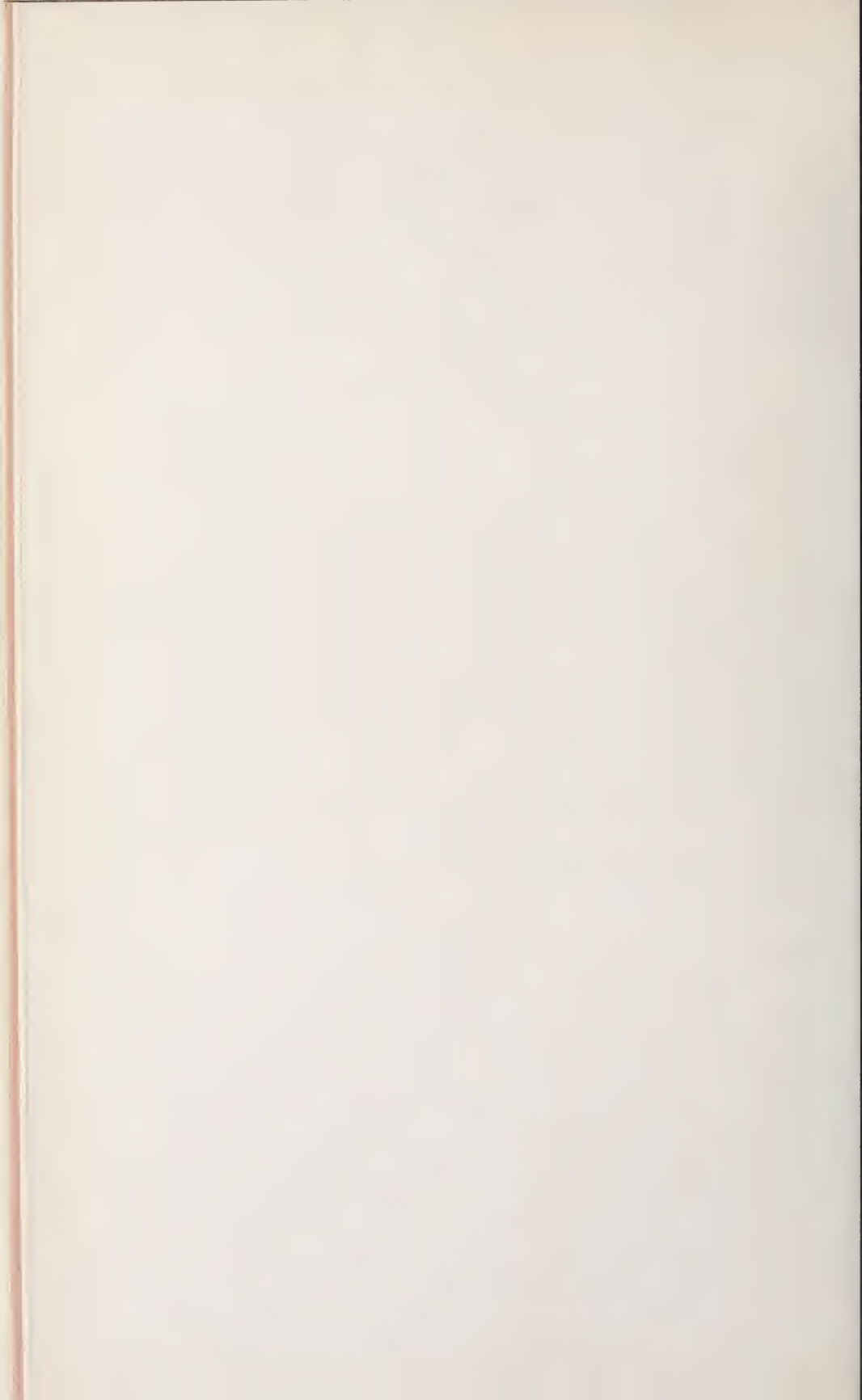
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Former Officers

PRESIDENTS	EDWARD E. AYER*	1894-1898
	HARLOW N. HIGINBOTHAM*	1898-1908
FIRST VICE-PRESIDENTS	MARTIN A. RYERSON*	1894-1932
	ALBERT A. SPRAGUE*	1933-1946
SECOND VICE-PRESIDENTS	NORMAN B. REAM*	1894-1902
	MARSHALL FIELD, JR.*	1902-1905
	STANLEY FIELD	1906-1908
	WATSON F. BLAIR*	1909-1928
	ALBERT A. SPRAGUE*	1929-1932
	JAMES SIMPSON*	1933-1939
	SILAS H. STRAWN*	1940-1946
	ALBERT B. DICK, JR.	1946-1951
THIRD VICE-PRESIDENTS	ALBERT A. SPRAGUE*	1921-1928
	JAMES SIMPSON*	1929-1932
	ALBERT W. HARRIS	1933-1941
SECRETARIES	RALPH METCALF	1894
	GEORGE MANIERRE*	1894-1907
	FREDERICK J. V. SKIFF*	1907-1921
	D. C. DAVIES*	1921-1928
	STEPHEN C. SIMMS*	1928-1937
TREASURERS	BYRON L. SMITH*	1894-1914
DIRECTORS	FREDERICK J. V. SKIFF*	1893-1921
	D. C. DAVIES*	1921-1928
	STEPHEN C. SIMMS*	1928-1937

* Deceased

Former Members of the

Board of Trustees

GEORGE E. ADAMS,* 1893-1917
OWEN F. ALDIS,* 1893-1898
ALLISON V. ARMOUR,* 1893-1894
EDWARD E. AYER,* 1893-1927

JOHN C. BLACK,* 1893-1894
WATSON F. BLAIR,* 1894-1928
LEOPOLD E. BLOCK,* 1936-1952

JOHN BORDEN, 1920-1938
M. C. BULLOCK,* 1893-1894
DANIEL H. BURNHAM,* 1893-1894
HARRY E. BYRAM,* 1921-1928

WILLIAM J. CHALMERS,* 1894-1938
BOARDMAN CONOVER,* 1940-1950
RICHARD T. CRANE, JR.,* 1908-1912
1921-1931

D. C. DAVIES,* 1922-1928
GEORGE R. DAVIS,* 1893-1899

JAMES W. ELLSWORTH,* 1893-1894

CHARLES B. FARWELL,* 1893-1894
HOWARD W. FENTON, 1941-1951
HENRY FIELD,* 1916-1917
MARSHALL FIELD, JR.,* 1899-1905

ERNEST R. GRAHAM,* 1921-1936
FRANK W. GUNSAULUS,* 1893-1894
1918-1921

ALBERT W. HARRIS, 1920-1941
HARLOW N. HIGINBOTHAM,* 1894-1919

EMIL G. HIRSCH,* 1893-1894
CHARLES L. HUTCHINSON,* 1893-1894
HUNTINGTON W. JACKSON,* 1894-1900
ARTHUR B. JONES,* 1894-1927

CHAUNCEY KEEP,* 1915-1929
WILLIAM V. KELLEY,* 1929-1932

GEORGE MANIERRE,* 1894-1924
CHARLES H. MARKHAM,* 1924-1930
CYRUS H. MCCORMICK,* 1894-1936
CHARLES A. MCCULLOCH,* 1936-1945

JOHN BARTON PAYNE,* 1910-1911
GEORGE F. PORTER,* 1907-1916

FREDERICK H. RAWSON,* 1927-1935
NORMAN B. REAM,* 1894-1910
JOHN A. ROCHE,* 1893-1894
THEODORE ROOSEVELT,* 1938-1944
MARTIN A. RYERSON,* 1893-1932

FRED W. SARGENT,* 1929-1939
STEPHEN C. SIMMS,* 1928-1937
JAMES SIMPSON,* 1920-1939
FREDERICK J. V. SKIFF,* 1902-1921
ALBERT A. SPRAGUE,* 1910-1946
SILAS H. STRAWN,* 1924-1946

EDWIN WALKER,* 1893-1910
LESLIE WHEELER,* 1934-1937
NORMAN WILLIAMS,* 1894-1899
WILLIAM WRIGLEY, JR.,* 1919-1931

* Deceased

Officers, Trustees, and Committees, 1952

OFFICERS

STANLEY FIELD, *President*
 MARSHALL FIELD, *First Vice-President*
 HENRY P. ISHAM, *Second Vice-President*
 SAMUEL INSULL, JR., *Third Vice-President*
 SOLOMON A. SMITH, *Treasurer*
 CLIFFORD C. GREGG, *Secretary*
 JOHN R. MILLAR, *Assistant Secretary*

BOARD OF TRUSTEES

LESTER ARMOUR	SAMUEL INSULL, JR.
SEWELL L. AVERY	HENRY P. ISHAM
WM. MCCORMICK BLAIR	HUGHSTON M. MCBAIN
LEOPOLD E. BLOCK*	WILLIAM H. MITCHELL
WALTHER BUCHEN	CLARENCE B. RANDALL
WALTER J. CUMMINGS	GEORGE A. RICHARDSON
ALBERT B. DICK, JR.	JOHN G. SEARLE
JOSEPH N. FIELD	SOLOMON A. SMITH
MARSHALL FIELD	LOUIS WARE
MARSHALL FIELD, JR.	ALBERT H. WETTEN
STANLEY FIELD	JOHN P. WILSON

COMMITTEES

Executive—Stanley Field, Solomon A. Smith, Albert H. Wetten, Wm. McCormick Blair, Samuel Insull, Jr., Marshall Field, John P. Wilson, Albert B. Dick, Jr., Henry P. Isham

Finance—Solomon A. Smith, Leopold E. Block,* Albert B. Dick, Jr., John P. Wilson, Walter J. Cummings, Albert H. Wetten, Henry P. Isham

Building—Albert H. Wetten, William H. Mitchell, Lester Armour, Joseph N. Field

Auditing—Wm. McCormick Blair, Clarence B. Randall, Marshall Field, Jr.

Pension—Samuel Insull, Jr., Sewell L. Avery, Hughston M. McBain

* Deceased, 1952

List of Staff, 1952

DIRECTOR

CLIFFORD C. GREGG
JOHN R. MILLAR, *Deputy Director*
E. LELAND WEBBER, *Executive Assistant*

DEPARTMENT OF ANTHROPOLOGY

PAUL S. MARTIN, *Chief Curator*
WILFRID D. HAMBLY,* *Curator, African Ethnology*
T. GEORGE ALLEN, *Research Associate, Egyptian Archaeology*
FAY-COOPER COLE, *Research Associate, Malaysian Ethnology*
ALEXANDER SPOEHR,† *Curator, Oceanic Ethnology*
DONALD COLLIER, *Curator, South American Ethnology and Archaeology*
J. ERIC THOMPSON, *Research Associate, Central American Archaeology*
A. L. KROEBER, *Research Associate, American Archaeology*
JOHN B. RINALDO, *Assistant Curator, Archaeology*
ELAINE BLUHM, *Assistant, Archaeology*
GEORGE I. QUIMBY, *Curator of Exhibits*
ROBERT J. BRAIDWOOD, *Research Associate, Old World Prehistory*
MIGUEL COVARRUBIAS, *Research Associate, Primitive Art*
ALFRED LEE ROWELL, *Dioramist*
GUSTAF DALSTROM, *Artist*
JOHN PLETINCKX, *Ceramic Restorer*
WALTER C. REESE, *Preparator*
AGNES H. McNARY, *Departmental Secretary*

DEPARTMENT OF BOTANY

THEODOR JUST, *Chief Curator*
B. E. DAHLGREN, *Curator Emeritus*
PAUL C. STANDLEY, *Curator Emeritus, Herbarium*
JULIAN A. STEYERMARK, *Curator, Phanerogamic Herbarium*
J. FRANCIS MACBRIDE, *Curator, Peruvian Botany*
EARL E. SHERFF, *Research Associate, Systematic Botany*
FRANCIS DROUET, *Curator, Cryptogamic Herbarium*
HANFORD TIFFANY, *Research Associate, Cryptogamic Botany*
DONALD RICHARDS, *Research Associate, Cryptogamic Botany*
E. P. KILLIP, *Research Associate, Phanerogamic Botany*

* Retired, 1952

† Resigned, 1952

DEPARTMENT
OF
BOTANY
(continued)

HUGH C. CUTLER,† *Curator, Economic Botany*
LLEWELYN WILLIAMS, *Associate, Forest Products*
J. S. DASTON, *Assistant, Botany*
EMIL SELLA, *Curator of Exhibits*
MILTON COPULOS,* *Artist-Preparator*
SAMUEL H. GROVE, JR., *Artist-Preparator*
FRANK BORYCA, *Preparator*
MATHIAS DONES, *Preparator*
DOLLA COX,‡ *Departmental Secretary*
VIRGINIA SHARP, *Departmental Secretary*

DEPARTMENT
OF
GEOLOGY

SHARAT K. ROY, *Chief Curator*
BRYAN PATTERSON, *Curator, Fossil Mammals*
RAINER ZANGERL, *Curator, Fossil Reptiles*
ROBERT H. DENISON, *Curator, Fossil Fishes*
ALBERT A. DAHLBERG, *Research Associate, Fossil Vertebrates*
EVERETT C. OLSON, *Research Associate, Fossil Vertebrates*
PRISCILLA F. TURNBULL, *Assistant, Fossil Vertebrates*
EUGENE S. RICHARDSON, JR., *Curator, Fossil Invertebrates*
GEORGE LANGFORD, *Curator, Fossil Plants*
R. H. WHITFIELD, *Associate, Fossil Plants*
VIOLET S. WHITFIELD, *Associate, Fossil Plants*
ERNST ANTEVS, *Research Associate, Glacial Geology*
ROBERT K. WYANT, *Curator, Economic Geology*
HARRY E. CHANGNON, *Curator of Exhibits*
ORVILLE L. GILPIN, *Chief Preparator, Fossils*
HENRY HORBACK, *Preparator*
WILLIAM D. TURNBULL, *Preparator*
STANLEY KUCZEK, *Preparator*
HENRY U. TAYLOR, *Preparator*
JOHN CONRAD HANSEN,§ *Artist*
MAIDI WIEBE, *Artist*
JOANNE NEHER,† *Departmental Secretary*

DEPARTMENT
OF
ZOOLOGY

KARL P. SCHMIDT, *Chief Curator*
COLIN CAMPBELL SANBORN, *Curator, Mammals*
PHILIP HERSHKOVITZ, *Assistant Curator, Mammals*
LUIS DE LA TORRE, *Associate, Mammals*

† Resigned, 1952

* Retired, 1952

‡ Reassigned, 1952

§ Deceased, 1952

DEPARTMENT
OF
ZOOLOGY
(continued)

AUSTIN L. RAND, *Curator, Birds*
 EMMET R. BLAKE, *Associate Curator, Birds*
 RUDYERD BOULTON, *Research Associate, Birds*
 MELVIN A. TRAYLOR, JR., *Research Associate, Birds*
 ELLEN T. SMITH, *Associate, Birds*
 CLIFFORD H. POPE, *Curator, Amphibians and Reptiles*
 CH'ENG-CHAO LIU, *Research Associate, Reptiles*
 HYMEN MARX, *Assistant, Reptiles*
 LOREN P. WOODS, *Curator, Fishes*
 ROBERT F. INGER, *Assistant Curator, Fishes*
 MARION GREY, *Associate, Fishes*
 WILLIAM J. GERHARD, *Curator Emeritus, Insects*
 RUPERT L. WENZEL, *Curator, Insects*
 HENRY S. DYBAS, *Associate Curator, Insects*
 ALFRED E. EMERSON, *Research Associate, Insects*
 GREGORIO BONDAR, *Research Associate, Insects*
 CHARLES H. SEEVERS, *Research Associate, Insects*
 ALEX K. WYATT, *Research Associate, Insects*
 LILLIAN A. ROSS, *Associate, Insects*
 AUGUST ZIEMER, *Assistant, Insects*
 RUTH MARSHALL, *Research Associate, Arachnids*
 FRITZ HAAS, *Curator, Lower Invertebrates*
 D. DWIGHT DAVIS, *Curator, Vertebrate Anatomy*
 DOROTHY B. FOSS, *Osteologist*
 R. M. STRONG, *Research Associate, Anatomy*
 LAURA BRODIE, *Assistant*
 HARRY HOOGSTRAAL, *Field Associate*
 DIOSCORO S. RABOR, *Field Associate*
 LEON L. WALTERS, *Taxidermist*
 FRANK C. WONDER, *Taxidermist*
 RONALD J. LAMBERT, *Taxidermist*
 CARL W. COTTON, *Taxidermist*
 CELESTINO KALINOWSKI, *Assistant Taxidermist*
 DOMINICK VILLA, *Tanner*
 JOSEPH B. KRSTOLICH, *Artist*
 MARGARET G. BRADBURY, *Artist*
 MARGARET J. BAUER, *Departmental Secretary*

ASSOCIATE
EDITORS

LILLIAN A. ROSS, *Scientific Publications*
 MARTHA H. MULLEN, *Assistant*
 HELEN ATKINSON MACMINN, *Miscellaneous Publications*

DEPARTMENT OF
THE N. W. HARRIS
PUBLIC SCHOOL
EXTENSION

RICHARD A. MARTIN, *Curator*
 ALBERT J. FRANZEN, *Preparator and Taxidermist*
 BERTHA M. PARKER, *Research Associate*

JAMES NELSON
AND
ANNA LOUISE
RAYMOND
FOUNDATION

MIRIAM WOOD, *Chief*
JUNE BUCHWALD†
LORAIN STEPHENS†
MARIE SVOBODA
HARRIET SMITH
JANE MONSON
ANNE STROMQUIST†
NANCY WORSHAM
EDITH FLEMING
DOLLA COX

THE LAYMAN
LECTURER

PAUL G. DALLWIG

THE LIBRARY

Administration:

META P. HOWELL, *Librarian*
LOUISE BOYNTON DENISON, *Administrative Assistant*

Classification and Cataloguing:

DAWN DAVEY, *Classifier*
EUNICE MARTHERS GEMMILL,† *Classifier*
M. EILEEN ROCOURT, *Classifier*

Reference:

AUDREY GREELEY, *Reference Librarian*

Accessions, Bindery, Stacks:

BORIS IVANOV, *Assistant Librarian*

ACCOUNTING

WILLIAM A. BENDER, *Auditor*
A. L. STEBBINS, *Assistant Auditor*
MARION K. HOFFMANN, *Bookkeeper*
ROBERT E. BRUCE, *Purchasing Agent*

BOOK SHOP

JESSIE DUDLEY, *in charge*

ADMINISTRATION
AND RECORDS

SUSAN M. CARPENTER, *Secretary to the Director*
MARION G. GORDON, *Registrar*
HILDA NORDLAND, *Assistant Recorder*
JEANNETTE FORSTER, *Assistant Recorder*

† Resigned, 1952

PUBLIC RELATIONS COUNSEL	H. B. HARTE CHRISTINE TARDY, <i>Associate</i>
DIVISION OF MEMBERSHIPS	PEARLE BILINSKE, <i>in charge</i>
DIVISIONS OF PHOTOGRAPHY AND ILLUSTRATION	JOHN BAYALIS, <i>Photographer</i> HOMER V. HOLDREN, <i>Assistant</i> DOUGLAS E. TIBBITTS, <i>Illustrator</i>
DIVISION OF MOTION PICTURES	JOHN W. MOYER, ¶ <i>in charge</i>
DIVISION OF PRINTING	RAYMOND H. HALLSTEIN, <i>in charge</i> HAROLD M. GRUTZMACHER, <i>Assistant</i>
MAINTENANCE	JAMES R. SHOUBA, <i>Superintendent</i> GUSTAV A. NOREN, <i>Assistant Superintendent</i>
ENGINEERING	WILLIAM E. LAKE, <i>Chief Engineer</i> LEONARD CARRION, <i>Assistant Chief Engineer</i>
THE GUARD	GEORGE WOODWARD, <i>Captain</i>

¶ On leave



CHICAGO NATURAL HISTORY MUSEUM
FORMERLY FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE SHORE DRIVE
OPEN EVERY DAY BUT CHRISTMAS AND NEW YEAR'S
FREE PARKING SPACE NEAR THE MUSEUM

Annual Report

of the Director

To the Trustees:

I have the honor to present a report of the operation of the Museum for the year ending December 31, 1952.

The uncertainty of financial support continues to be the chief problem of the Museum. Like all endowed institutions we find it increasingly difficult to live within our means. We are the victim of the inflationary processes that are going on within our country, and we cannot maintain our relative position, as a business would, by passing on the burden to the public.

Our task is to serve the public, not only through our exhibition halls but through our scientific research, publications, lecture courses, and educational extensions as well, and above all else to maintain an adequate staff of trained and properly paid scientific men and women, without which the work of the Museum cannot go forward. Yet the minimum cost for upkeep of the building, meeting our responsibilities to the public, and the support of our educational activities is now such that our resources are insufficient to meet the program of future development required to measure up to the leadership we have established in the past. The Museum is understaffed, our salaries are too low to meet present-day living costs, and we are not able to go ahead as we should with the planning of our expeditions, the purchase of collections, and the publication of the results of our research.

In preparing a budget for 1953, drastic reductions were made in recommended expenditures of all sorts in order that a balanced budget might be presented to the Board of Trustees. The budget for payroll alone absorbed in excess of seventy-five per cent of the total, and nothing was accomplished to relieve our hard-pressed scientific staff. In addition, very little was left to cover such operating necessities as heat, light and power, general maintenance, and everything else. The need for more endowment becomes greater year after year. Without additional endowment our activities must of necessity be curtailed and our staff reduced. It would seem that the Museum must look to the interested and public-spirited citizens of Chicago and the surrounding territory for additional support if it is to carry on.

It is recommended that the Board of Trustees consider steps to be taken at the earliest practicable moment, looking toward the increase of financial support from the community as a whole and particularly from visitors to the Museum.

ATTENDANCE

For several years the number of school groups visiting the Museum in the spring months of April and May has been increasing markedly. In 1952 attendance reached a high peak in May for out-of-Chicago schools and in June for Chicago schools. The fall months of October and November are beginning to show the same trend. Some groups are composed of an entire school or even of most of the school children from a whole county. Such a county group of teachers, parents, and more than one thousand students from Rock County, Wisconsin, arranged for a day's trip to the Museum. Another unusual group was the 1,250 4-H Club delegates to the National Congress of 4-H Clubs on their annual visit to Chicago. Organizations using the Museum for their meeting place included the Chicago Ornithological Society, Illinois Audubon Society, Kennicott Club, and Nature Camera Club of Chicago. The total number of visitors at the Museum in 1952 was 1,305,556, an increase of 53,804 over the total for the year before. Free admissions amounted to 1,170,786 persons—all the visitors on Thursdays, Saturdays, and Sundays and those admitted free on all days (children, students, teachers, Members of the Museum, and uniformed officers and enlisted men of the armed forces). Under the Museum's generous rules for free admissions only 134,770 visitors paid the nominal admission fee, less than 10.5 per cent of the total attendance.

TRUSTEES AND OFFICERS

The loss of Mr. Leopold E. Block from the Board of Trustees was felt keenly. I should like to emphasize rather than merely to repeat the memorial resolution adopted by the Board of Trustees at its December meeting:

"The death on November 11, 1952, of Mr. Leopold E. Block at the age of eighty-three years brought to its close a life that was unusual even in Chicago which has bred so many great industrial leaders.

"He saw the first beginnings of the company which he helped to found, yet lived to see it become a nation-wide institution that played an important role in the economic life of our country both in peace and in war. At every step in that process the growth of his company bore the impress of his genius and was enriched by his wisdom.

"Meanwhile, his influence in the industrial community of Chicago grew steadily, and his advice and guidance were increasingly sought in the development of other institutions and organizations, to which he devoted his best efforts so unselfishly.

"He joined the Board of Trustees of Chicago Natural History Museum in 1936, became a member of its Finance Committee in 1939, and through his continuous service thereafter had an important part in bringing this institution to the place of unquestioned leadership which it now enjoys.

"It was characteristic of his devotion to the purposes of the Museum that he should have remembered it with such a generous gift in his will.

"Mr. Block was both respected and beloved by his fellow Trustees and his genial personality will be greatly missed from their future deliberations.

"Therefore, be it resolved that this expression of our sorrow at his passing be permanently preserved on the records of the Board of Trustees of the Museum;

"And be it further resolved that our deep sympathy be conveyed to the members of his family in their bereavement and that a copy of this resolution be sent to his widow."

Stanley Field, president of Chicago Natural History Museum, was re-elected at the annual meeting of the Board of Trustees in January to serve for his forty-fourth consecutive year. Other officers re-elected are Marshall Field, first vice-president; Samuel Insull, Jr., third vice-president; Solomon A. Smith, treasurer;

Clifford C. Gregg, secretary; and John R. Millar, assistant secretary. Henry P. Isham, Trustee, was elected second vice-president to fill a vacancy. Walther Buchen, John G. Searle, and Louis Ware were elected to membership on the Board of Trustees to fill vacancies caused by the death of Boardman Conover and of Leopold E. Block and the retirement of Howard W. Fenton.

GIFTS TO THE MUSEUM

Under the will of the late Leopold E. Block, Trustee, the Museum received a bequest of five hundred shares of common stock of Inland Steel Company; Sterling Morton, of Chicago, gave \$25,375 for the purpose of establishing the Sterling Morton Endowment Fund; Walther Buchen, Trustee, gave an additional \$11,000 for zoological purposes; and S. C. Johnson and Son, Incorporated, of Racine, Wisconsin, again gave \$4,000 for research on wax-bearing palms. Stanley Field, President of the Museum, added \$10,000 to the Stanley Field Special Fund; Dr. Maurice L. Richardson, of Lansing, Michigan, added \$2,550 to the Maurice L. Richardson Paleontological Fund; and Miss Margaret B. Conover, of Chicago, added \$5,411.25 to the Conover Game-Bird Fund. The Museum received \$2,000 from the estate of James Witkowsky for the Flora Mayer Witkowsky Fund; \$391.49 from the estate of Mrs. Abby K. Babcock; and \$13,000 from the Mrs. Joan A. Chalmers Real Estate Trust. Other gifts of money were received from Peder A. Christensen, C. Suydam Cutting, Mrs. Ralph W. Davis, John W. Gatenby, Samuel Insull, Jr., Thomas C. Jones, National Society of Colonial Dames of America (Illinois), Clarence B. Randall, Miss Lillian A. Ross, Mrs. Ellen T. Smith, Harold H. Swift, and a number of anonymous givers. Gifts of materials are listed at the end of this Report (see page 87) and under the headings of the scientific departments.

Donors who have given to the Museum \$1,000 to \$100,000 in money or materials are elected Contributors by the Board of Trustees (see page 100 for names of Contributors). Contributors elected in 1952 are: Leopold E. Block, posthumously elected (in recognition of his bequest listed above); Miss Margaret B. Conover (in recognition of her generous support of work of the Museum); Byron Harvey III, Chicago (gift of an important collection of Hopi kachina dolls); J. Edward Maass, posthumously elected (a bequest of \$2,500); Sterling Morton (in recognition of his gift listed above); and Dr. Harold Trapido, Gorgas Memorial Laboratory, Panama (gift of valuable zoological specimens).

MEMBERSHIP

The Museum thanks its many Members for their loyal support of its scientific and educational work. The total number of Members on the lists of the Museum on December 31, 1952, was 4,801. The number in each membership classification was as follows: *Benefactors*—25; *Honorary Members*—8; *Patrons*—16; *Corresponding Members*—6; *Contributors*—180; *Corporate Members*—40; *Life Members*—152; *Non-Resident Life Members*—19; *Associate Members*—2,202; *Non-Resident Associate Members*—12; *Sustaining Members*—21; *Annual Members*—2,120. The names of all Members of the Museum during 1952 are listed at the end of this Report under the the headings of the classes of membership.

MEMBERS' NIGHT

Recalling the splendid response in 1951 to Members' Night, a second Members' Night was held on Friday evening, October 10, 1952. The theme for this occasion—the cultural advancement of our American Indians—was carried out by a preview for Members of the newly reinstalled Hall of Plains Indians (Hall 6), by a special exhibit in Stanley Field Hall of Hopi kachina dolls from the collection presented by Byron Harvey III and of Indian dolls on loan from Mrs. Lenore Blanchard Warner, and by the presentation in the James Simpson Theatre of the feature of the evening, "American Indian Style Show." Frederic H. Douglas, Curator of Native Art, Denver Art Museum, who staged the style show, described authentic Indian costumes as they were graciously modeled by students and faculty members from the Art Institute of Chicago. The Museum cafeteria was open at 6 o'clock for the benefit of our visitors, whose numbers so far exceeded expectations that a waiting line was unavoidably established. Even though the building was open until 10:30 o'clock, many visitors did not have sufficient time to visit the Library and the many laboratories, workrooms, and studios on the third and fourth floors. For this reason it is probable that Members' Night in 1953 will feature the work being carried on behind the scenes at the Museum by its scientific and technical staff. The purpose of Members' Night, of course, is to give to those who are helping to support the Museum the opportunity better to understand its methods and objectives as well as to enable the Museum to show especial appreciation for the interest and the steadfast loyalty of its Members.

JAMES NELSON AND ANNA LOUISE RAYMOND
FOUNDATION FOR PUBLIC SCHOOL AND
CHILDREN'S LECTURES

Duties of the staff of The James Nelson and Anna Louise Raymond Foundation are multiple and much broader than normally thought of in connection with a lecture foundation. In addition to lectures in the halls of the Museum and in the schools of Chicago, this Foundation edits and assembles motion-picture presentations, supervises groups of various ages in systematic study of Museum exhibits, prepares "Museum Stories," and co-ordinates certain of its lectures with the curriculum of the Chicago public schools. Also, from time to time, indoctrination courses for schoolteachers are presented in order to assist in the use of Museum exhibits to supplement classroom instruction. During the year two series of programs planned especially to fit courses of study in the Chicago public

An eager crowd approaches the James Simpson Theatre to see a children's program.



schools were offered at the Museum and two series of "Museum Stories" (*Mythical Animals* and *Life in the South American Jungle*) were distributed at the spring and fall series of motion-picture programs for children. During the fall months, when Girl Scouts of the Chicago area used the Museum in a nature-study project, the staff of Raymond Foundation trained about sixty Girl Scouts as Museum aides to assist the troops as they studied in the Museum halls. The Girl Scouts wrote letters on "What We Learned at the Museum," which were submitted to Brook Hill Farms, Inc., of Chicago, whose president, Howard T. Greene, sponsored the project, and to each of the one hundred troops that wrote the best letters Brook Hill Farms gave an official Girl Scout American flag. More than five thousand Girl Scouts visited the Museum during the project and nearly one thousand attended on the day of the presentation of flags. The *Chicago Tribune* sponsored six tours in the Museum during one weekend as part of a general program in civic co-operation. The *Tribune* generously used its news columns to inform the public of the special tours and issued tickets through its public-service office.

A summary of all activities of Raymond Foundation for the year, with attendance figures, follows:

RAYMOND FOUNDATION ACTIVITIES

ACTIVITIES WITHIN THE MUSEUM

For children	Groups	Attendance	Groups	Attendance
Tours in Museum halls	1,109	38,930		
Lectures preceding tours . . .	112	10,311		
Motion-picture programs . . .	30	21,867		
TOTAL			1,251	71,108

For adults

Tours in Museum halls	361	6,625		
TOTAL			361	6,625

EXTENSION ACTIVITIES

Chicago public schools				
Elementary schools	65	20,505		
TOTAL			65	20,505

TOTAL FOR RAYMOND FOUNDATION ACTIVITIES	1,677	98,238
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THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

The chief responsibilities of the Department of the N. W. Harris Public School Extension are twofold: preparation and maintenance of exhibits that can be taken out of the Museum to use in classrooms as visual aids in teaching natural history and circulation of these portable exhibits by two departmental trucks to schools and other institutions eligible for the service. Both activities continued in normal operation during the year. In those months when school was in session two exhibits were delivered every ten school days to each school on the circulation list and the two exhibits left on the previous call were picked up, so that each school received thirty-four different exhibits. Harris Extension exhibits are circulated without charge. All public elementary and high schools within the Chicago city limits are eligible for the service, and, as far as is possible within the limitations imposed by the availability of exhibits, circulation is extended to those denominational and private schools and public-service institutions that apply for the service and demonstrate a need for it. In order to supply each of the 510 on the circulation list with two exhibits, more than one thousand exhibits must be kept in continuous circulation during the school year, and a safe reserve for filling special requests is held in the Museum. This service that the Museum makes available to the schools of Chicago is unique. No other city has one of comparable scope. As in other years many consultations were held with representatives from other museums seeking information about establishing extension services for their own communities as well as about preparation and maintenance of portable exhibits.

Fifty-one requests for specific exhibits or supplementary teaching-material that can be handled and studied directly by the pupils were satisfactorily filled (insect specimens, rock and mineral collections, bird and mammal skins, and bird eggs and nests). During the year thirty-one cases were damaged in circulation and two cases containing exhibits of Eskimo household implements and fishing equipment were stolen. Fourteen new exhibits were completed, nine botany exhibits and five geology, an addition that brings a better balance in the subjects covered by Harris Extension exhibits. In seven old exhibits that were completely revised for circulation painted habitat settings were substituted for old photographic or plain backgrounds, exhibit material was rearranged, and new accessories were added. Maintenance repairs in the workshop were necessary on 274 cases, and more than three hundred label tags were replaced on study skins in the special loan-collection. Work

Pebbles are lessons in geology

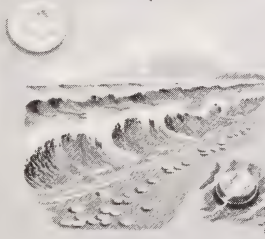
They are rounded by streams...



Any pebble is an eroded fragment of a larger rock. It owes its form to work done on it by wind, wave, stream and ice.

The current rounds them about taking all rough edges.

...Flattened by waves...



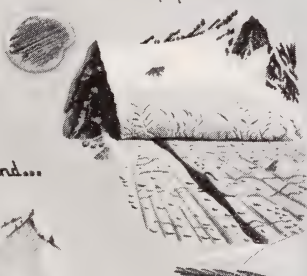
Embedded pebbles are washed by waves over round and flat.

...and waterfalls...



Pebbles are worn below waterfalls by pebbles whirling about. These pebbles become very round.

...scratched by glaciers...



...scoured by wind...



Embedded pebbles sand-blended from various angles are called ventifacts.

Pebbles frozen by south advancing glaciers are scratched by bed rock.

A story of erosion is told graphically by five identical new exhibits circulated among schools of Chicago by the N. W. Harris Public School Extension Department.

in the field consisted of short collecting-trips in the Chicago area. William J. Beecher, formerly a preparator in the department, assisted during April in completion of the five new geology exhibits. The services of the late John Conrad Hansen, Artist, were made available to the department until his illness in October.

For several years the operating costs of this department have exceeded the income received from the endowment generously provided by the late N. W. Harris and members of his family. Deficits are met annually by an appropriation from other Museum funds. Inflation is seriously reducing the service of this department and is blocking the possibility of meeting the ever-increasing requests for periodic distribution of the popular Harris Extension exhibits. The loyalty and skill of the staff of this department have helped to maintain excellent service under most difficult conditions.

LECTURE PROGRAMS FOR ADULTS

The Saturday-afternoon lectures held by the Museum in March, April, October, and November were presented to a total of 17,054 adults, 2,399 more than attended the series last year. Average attendance at each lecture was about 947 persons. It is noteworthy that several members of our lecture audience have records of almost unbroken attendance for a period of fifteen or twenty years.

THE LAYMAN LECTURER

During the year Paul G. Dallwig, our Layman Lecturer, completed his twelfth and began his thirteenth season. Between seasons he revised each of his lectures in order to give his audiences the benefit of new information pertaining to the subjects he discusses and to add freshness to his presentations. The size of the halls in the Museum necessarily restricts attendance but, even so, a total of 4,695 persons was accommodated. The real gratitude of the Museum to Mr. Dallwig for his unusual work is again recorded.

SPECIAL EXHIBITS

A special exhibit of outstanding pieces from the Museum's extensive collection of Mexican antiquities lately acquired by an exchange with the National Museum of Mexico (see 1951 Report, page 35) was placed in Stanley Field Hall for the month of July. The special exhibit of Indian dolls lent by Mrs. Lenore Blanchard Warner and of Hopi kachina dolls from the collection presented to the Museum by Byron Harvey III, a feature of Members' Night, October 10, remained on exhibition for the public until November 9. Other special exhibits during the year were water-colors of birds of Mexico by George M. Sutton; photographs of Angkor by Ernest Rathenau, of New York; "Life in Liberia," fifty photographs by Griff Davis, photographer for Black Star Publishing Company, New York; Korean ethnological and archaeological material from the H. N. Higinbotham Korean collection presented to the Museum in 1899; drawings by students of the Junior School of the Art Institute of Chicago; the Second Annual Amateur Handcrafted Gem and Jewelry Competitive Exhibition, sponsored by the Chicago Lapidary Club; and the Seventh Chicago International Exhibition of Nature Photography, held under the auspices of the Nature Camera Club of Chicago and the Museum as an annual event.

STAFF OF THE MUSEUM

Dr. Wilfrid D. Hambly, Curator of African Ethnology in the Department of Anthropology for the past twenty-six years, and Milton Copulos, Artist-Preparator for many years in the plant-reproduction laboratories of the Department of Botany, retired on December 31. Dr. Alexander Spoehr, Curator of Oceanic Ethnology since 1940, resigned at the end of the year to accept the directorship of the Bernice P. Bishop Museum in Honolulu, and Dr. Hugh C. Cutler, Curator of Economic Botany since 1947, resigned effective December 31. Other resignations during the year were: Mrs. Eunice M. Gemmill, Classifier, Library; Miss Joanne Neher, Secretary, Department of Geology; and Mrs. June Buchwald, Mrs. Lorain Stephens, and Mrs. Anne Stromquist, Guide-Lecturers, James Nelson and Anna Louise Raymond Foundation.

Miss Bertha M. Parker, of the Laboratory School of the University of Chicago, author of books on science for children and on science-education for adults, was elected Research Associate in the Department of the N. W. Harris Public School Extension by the Board of Trustees, who also elected Miss Lillian A. Ross, Associate Editor of Scientific Publications, an Associate in the Division of Insects and Luis de la Torre, of the University of Michigan, an Associate in the Division of Mammals. Appointments during the year were: Miss Dolla Cox (reassigned), Miss Edith Fleming, and Miss Nancy Worsham, Guide-Lecturers, Raymond Foundation; Miss Marion K. Hoffmann, Bookkeeper; Homer V. Holdren, Assistant, Division of Photography; Miss Martha Mullen, Assistant Editor, Scientific Publications; Miss Virginia Sharp, Secretary, Department of Botany; and Miss Maidi Wiebe, Artist, Department of Geology. Miss Christine Tardy was promoted from Assistant to Associate Public Relations Counsel.

The Museum thanks its faithful volunteer workers for their help. Names of some are in the List of Staff. Other volunteers are Richard Duffey, Ralph Eiseman, Harry Nelson, Marshall Sahlins, Floyd A. Swink, and Archie F. Wilson.

It is with deep regret that I record the death of two Museum employees and of two Museum pensioners: Henry F. Ditzel, on May 21, former Registrar of the Museum, in service of the Museum for nearly forty years before his retirement in 1944; John Conrad Hansen, on November 11, Artist in the Department of Geology since 1938; Anthony T. Mazur, on December 6, employed in the Division of Maintenance from 1926 until his retirement in 1947; and Boleslaw Nytko, on November 15, a new employee.

MUSEUM EXPEDITIONS

The Buchen East Africa Zoological Expedition, financed and led by Walther Buchen, Trustee, of Winnetka, collected material for a habitat group of African marsh birds. One hundred and eighty-nine birdskins and sixteen nests were collected for this group, together with photographic studies for background and foreground, papyrus to reproduce the characteristic swamp vegetation, and other accessory material. The group features the remarkable whaleheaded stork, but even more significantly it represents one of the great natural aggregations of animals of the world—the rich and varied

Curator Austin L. Rand, Miss Ruth Johnson, Staff Taxidermist Carl W. Cotton, and Richard Duffey unpack material from East Africa for Nile marsh-bird exhibit.



bird-life of the marshlands of equatorial Africa. Field work was accomplished under the favorable conditions of active co-operation with John G. Williams of the Coryndon Museum in Nairobi.

The Museum conducted twenty-three expeditions and field trips in 1952. Their work is described in this Report under the headings of the scientific departments. Expeditions and field trips of 1952 and their leaders are:

DEPARTMENT OF ANTHROPOLOGY: *Southwest Archaeological Expedition*—Dr. Paul S. Martin, Chief Curator

DEPARTMENT OF BOTANY: *Cuba Botanical Expedition*—Dr. B. E. Dahlgren, Curator Emeritus; *European Study Trip*—Dr. Theodor Just, Chief Curator

DEPARTMENT OF GEOLOGY: *Austria Paleontological Expedition*—Dr. Rainer Zangerl, Curator of Fossil Reptiles; *Canadian Maritime Provinces Paleontological Field Trip*—Dr. Robert H. Denison, Curator of Fossil Fishes; *Indiana Paleontological Field Trip*—Eugene S. Richardson, Jr., Curator of Fossil Invertebrates; *Tennessee Paleontological Field Trip* and *Wilmington (Illinois) Paleontological Field Trips*—George Langford, Curator of Fossil Plants; *Texas Paleontological Expedition*—Orville L. Gilpin, Chief Preparator of Fossils; *Utah Economic Geology Field Trip*—Robert K. Wyant, Curator of Economic Geology

DEPARTMENT OF ZOOLOGY: *Aleutian Zoological Expedition*—Colin Campbell Sanborn, Curator of Mammals; *Buchen East Africa Zoological Expedition*—Walther Buchen, Trustee; *California Zoological Field Trip*—Henry S. Dybas, Associate Curator of Insects; *Colombia Zoological Expedition, 1948-52*—Philip Hershkovitz, Assistant Curator of Mammals; *Co-operative Field Work with United States Fish and Wildlife Service in Gulf of Mexico*—Loren P. Woods, Curator of Fishes; *Cuba Zoological Expedition* and *Florida Zoological Field Trip*—Dr. Fritz Haas, Curator of Lower Invertebrates; *European Study Trip, 1951-52*—Rupert L. Wenzel, Curator of Insects; *Guatemala Zoological Expedition*—Luis de la Torre, Associate, Division of Mammals; *Mexico Zoological Field Trip*—Clifford H. Pope, Curator of Amphibians and Reptiles; *Mount Dapiak Zoological Expedition*—D. S. Rabor, Field Associate; *United States Navy Medical Research Unit No. 3, Cairo, Egypt, 1949-53*—Harry Hoogstraal (in charge of Sudan Substation), Field Associate (Museum representative); *West Africa Zoological Expedition, 1950-52*—Harry A. Beatty

Department of Anthropology

Research and Expeditions

During the summer, from June to October, the Southwest Archaeological Expedition continued its investigations of the Mogollon culture of west-central New Mexico. Archaeological excavation, undertaken in a large open site as well as in two caves and two cliff dwellings located in Apache National Forest, was done under a permit issued to Chicago Natural History Museum by the Forest Service, United States Department of Agriculture. Dr. Paul S. Martin, Chief Curator, in charge of the expedition, was assisted by Dr. John B. Rinaldo, Assistant Curator of Archaeology, Miss Elaine Bluhm, Assistant in Archaeology (who supervised the excavations), Thomas P. Alder, Robert M. Adams, Miss Vivian Broman, W. T. Egan, and Miss Katherine Marjorie Kelly.

In previous seasons our archaeologists had delineated the earlier periods of Mogollon culture quite completely, although some additional specimens were needed to permit reliable comparisons with similar artifact types from other areas and to enable use of more precise statistical measures. The primary goal in 1952 was an equally complete delineation of the later phases of this culture, particularly the Reserve phase, which is tentatively dated at about A.D. 1000 to A.D. 1200. The plan was threefold: (1) to secure specimens of perishable materials such as sandals, basketry, and matting from the later eras, (2) to secure additional cultivated-plant specimens and other perishable artifacts from the earlier levels of dry caves to supplement those secured by previous excavations, and (3) to determine the nature of the large rectangular ceremonial structures and to obtain additional information about the domestic architecture of this time (about A.D. 1050). The expedition was completely successful in accomplishing these objectives. About 1,000 specimens were recovered, not counting broken pieces of pottery, odd lengths of cordage, and plant specimens. There were bows and arrows, portions of basketry and matting, sandals, wooden digging-sticks, cigarettes, painted wooden ceremonial objects (*tablitas*) and prayer sticks, grinding stones, tools of bone, arrow points, pottery vessels, nets, beans and bean pods, corn and corncobs, nuts, squash rinds, and animal bones (deer, rabbit, squirrel, turkey, and dog). Among choice discoveries were five beautifully chipped knife blades of basalt, a large twill-plaited mat of rushes, and a rabbit net of great length.



Eleven-room cliff dwelling excavated by the Southwest Archaeological Expedition shows two-story section with part of the first-story ceiling perfectly preserved.

The two cliff dwellings excavated by the expedition were among the first to be scientifically investigated in the Mogollon area. One cliff house, overlooking the Blue River, had two rooms and was crudely constructed of inferior-quality masonry that contained a high proportion of adobe mortar. The other, high in the mountains, was well constructed and in amazingly good condition. Its smoothly plastered walls, still standing to a height of ten feet, were stoutly built of large slabs set in adobe mortar. Parts of this house had two stories, and there were eleven rooms altogether, some partially cut in bed rock. The ceiling of the first story is perfectly preserved. It was made of several beams, about five inches in diameter, across which were laid wooden splints topped by a five-

inch layer of adobe. This type of ceiling, so common in other parts of the Southwest, is the first to be found intact in this area. Part of one of the beams will be sent to the Tree Ring Laboratory in Tucson in the hope that the wood can be dated.

The ceremonial structure excavated by the expedition was a large rectangular building measuring 28 feet by 32 feet, with a floor four feet below the surface of the ground and, serving as a lateral-entrance passageway at the middle of the east wall, a ramp about 30 feet long and 7 feet wide. This masonry structure was built inside an earlier structure having walls of wattle-and-daub construction made of upright posts set about six inches apart with the interstices filled by branches and mud. The pottery contents of this building, although not yet completely analyzed, are believed to indicate extensive trade contacts with the Mimbres area to the south. This structure and its contents are an important link in the history of ceremonial structures in the Southwest.

In November the Museum published *Mogollon Cultural Continuity and Change, The Stratigraphic Analysis of Tularosa and Cordova Caves*, a report by Chief Curator Martin, Dr. Rinaldo, Miss Bluhm, Dr. Hugh C. Cutler, Curator of Economic Botany, and Roger Grange, Jr., that presents the results of archaeological field-work in the seasons of 1950 and 1951. A tabulation at the end of the volume summarizes for the general reader changes and developments in all the traits of tangible culture from Tularosa and Cordova caves. For the scientist the report describes in detail many new traits and contributes much to the ordering of previously acquired data.

During the first months of the year Assistant Curator Rinaldo made, for use in this report, stratigraphic and statistical analyses of stone, bone, and clay artifacts recovered from Cordova Cave during the summer of 1951 and prepared charts of the natural and artificial stratigraphy of the cave showing how differences in soil levels are correlated with the different periods of occupation. For a report on the field work of 1952, he made, after his return from the field, a precise analysis of the bone, stone, and clay artifacts from the two caves and the two cliff dwellings excavated during the season. He also completed a paper on the classification of prehistoric cultures of the southwestern United States.

Dr. Alexander Spoehr, Curator of Oceanic Ethnology, completed for publication by the Museum his first report on the results of the Anthropological Expedition to Micronesia, 1949-50, a study of the ethnology of Saipan, and most of his second report, the prehistory of the Mariana Islands based on analysis of archaeological material



These three Indian dolls representing the Hano long-haired kachina maiden are in the collection of Hopi kachina dolls presented to the Museum by Byron Harvey III.

excavated by the expedition. Through the generous co-operation of Dr. Willard F. Libby, of the Institute for Nuclear Studies, University of Chicago, two radiocarbon determinations of the age of archaeological material from the Marianas were made. One of these yielded a date of 1527 B.C. ± 200 for the Chalan Piao site on Saipan. This date, the earliest now known for man in either Micronesia or Polynesia, aids immeasurably in the reconstruction of prehistoric events in Oceania. The second date, A.D. 854 ± 145 , from the Blue site on Tinian, is important because it is the first indication of the antiquity of a type of culture that persisted in the Marianas up to the arrival of Magellan in 1521. The date has significance also in the history of disease, for at the Blue site a pathological skeleton was uncovered in a burial. Dr. T. D. Stewart of the United States National Museum, an authority on paleopathology, has diagnosed the pathology of this skeleton to be the result of yaws. The carbon-14 date is evidence that yaws was present in

the Pacific in prehistoric times, a fact that contributes to our knowledge of the history of yaws as well as to that of syphilis, which is caused by a closely related spirochete.

Dr. Wilfrid D. Hambly, Curator of African Ethnology, continued his research on the large collection of crania collected by the Joseph N. Field South Pacific Islands Expedition, 1909-13. During the year the Museum published *Bibliography of African Anthropology, 1937-1949* by Curator Hambly, a supplement to *Source Book for African Anthropology* published by the Museum in 1937 and now out of print. The titles in this bibliography are arranged by authors, subjects, and regions of Africa, and the periodicals containing articles on African anthropology are classified alphabetically and by regions of Africa.

Donald Collier, Curator of South American Ethnology and Archaeology, did research on Mexican archaeology in connection with classification, cataloguing, and exhibition of the important collection of Mexican antiquities received in exchange from the National Museum of Mexico at the end of 1951. He continued work on archaeological materials excavated in 1946 by the Archaeological Expedition to Peru and by the end of the year had finished his report on the expedition except for completion of the illustrations. Dr. A. L. Kroeber, Research Associate in American Archaeology, completed a report on his excavations of the Proto-Lima culture in Peru, for which Curator Collier supervised the making of photographs and drawings. This report, which will be published by the Museum, is the fifth to result from the Captain Marshall Field Expedition to Peru, led by Dr. Kroeber in 1925 and 1926. The Museum has previously published *Ancient Pottery from Trujillo, The Northern Coast*, and *Cañete Valley*, by Dr. Kroeber, and *Textiles of the Early Nazca Period*, by Lila M. O'Neale with preface by Dr. Kroeber. The sixth and final report, on Early Nazca culture, is now being prepared for publication by Dr. Kroeber in collaboration with Curator Collier.

From January to July George I. Quimby, Curator of Exhibits, was visiting professor of American archaeology and ethnology in the Faculty of the History of Philosophy at the University of Oslo, Norway, under a Fulbright Grant from the United States Department of State. In addition to teaching American archaeology and ethnology he studied the stone-age archaeology of northern Eurasia, participated in the excavation of an iron-age burial mound near Sande in southern Norway, and designed new exhibits for the North American section of the Universitetets Etnografiske Museum. With the aid of a grant from the Wenner-Gren Foundation for Anthro-

pological Research he made a study of northern European museums for this Museum, visiting museums in Paris, London, Tromso, Trondheim, Bergen, Oslo, Goteborg, Stockholm, Copenhagen, and Helsinki to examine anthropological collections and exhibits. One conclusion based upon collections observed in the course of this museum survey is that the cultures of the circumboreal zone of Eurasia and America have been closely related in past periods. After his return in July he continued research in North American ethnology for the exhibition program, with special emphasis on materials of the Pomo Indians of California. He completed a report for publication on the Museum's collection of Indian portraits

A diorama of a tent village is shown in the new Hall of Plains Indians (Hall 6).



painted by George Catlin in 1832 and prepared several chapters of a report on the excavation of the Bayou Goula site, a historic period-occupancy of east-central Louisiana.

In connection with the exhibition program it was necessary to reorganize the reference collections in several storerooms, to strip cases formerly on exhibition, and to make inventories of reference collections and of specimens now on exhibition. For the first half of the year this work was undertaken by Roger Grange, Jr., assistant, and during the second half by Phillip Lewis, assistant.

Accessions—Anthropology

The most valuable and important of the artifacts obtained by the Southwest Archaeological Expedition of 1952 are the sandals, mats, nets, bows, arrows, and *tablitas* because they are the only specimens of such perishable materials that have been recovered from relatively "pure" late sites of the Mogollon Indians. These unique materials are now being classified and studied. In addition, quantities of corn and other vegetal remains were recovered that should reveal much concerning the history of domesticated plants during the later eras. An important and interesting accession of the year is the collection of 180 Hopi kachina dolls that was given to the Museum by Byron Harvey III, of Chicago, who has been collecting kachinas since he was a young boy.

Exhibits—Anthropology

Under the direction of Curator of Exhibits Quimby, with assistance from Curator Spoehr and Curator Collier, twenty-five new exhibits (including one diorama) were completed during the year by Gustaf Dalstrom, Artist, Alfred Lee Rowell, Dioramist, and Walter C. Reese, Preparator. The papier-mache manikins used in some of the new exhibits were made by John Pletinckx, Ceramic Restorer. All of the new exhibits were installed in Hall 6, which, when complete, will contain fifty-two exhibits (including four dioramas). This hall is divided into three sections: Indians of the Plains, Intermountain tribes that were influenced by Plains Indians culture, and Indians of the California culture area. The first two sections of the hall were opened to the public after a preview by Members of the Museum and their guests on the evening of October 10. The third section of the hall will be completed by the spring of 1953.

Department of Botany

Research and Expeditions

Paul C. Standley, Curator Emeritus of the Herbarium, who is in residence at the Escuela Agrícola Panamericana near Tegucigalpa in Honduras, has continued his studies of the flora of middle Central America. He devoted much of his time during the year to identification of specimens collected by various contributors. His catalogue of trees of Honduras will be printed in an early number of *Ceiba*, and a dictionary of economic plants of Central America, an extensive reference source, is in preparation. Another of his projects concerns poisonous plants of Central America. Dr. Margery C. Carlson, of Northwestern University, who traveled by jeep to southern Mexico and collected widely in the tropical cloud-forest of that region, spent several weeks in Honduras as guest of the Escuela Agrícola Panamericana, where she worked with Curator Emeritus Standley and collected in various parts of the country.

Study of *Copernicia* palms was continued by Dr. B. E. Dahlgren, Curator Emeritus of Botany. With the aid of the S. C. Johnson and Son Fund he made a visit to Cuba and brought back to the Museum much new palm material, notes, and several hundred photographs. Experimental work on *Copernicia* species was continued at Atkins Garden and Laboratory of Harvard University at Soledad and at the University of Chicago. J. Francis Macbride, Curator of Peruvian Botany, completed for publication another large part of his *Flora of Peru*. This part covers fourteen families beginning with the Sapindaceae and including the Theaceae.

Dr. Theodor Just, Chief Curator, continued his study of living and fossil cycads and cycadeoids and of the distribution of fossil ferns and pteridosperms. With the aid of a grant from the National Academy of Sciences he visited various botanical institutions in Switzerland, western Germany, Sweden, Belgium, and England to study type collections and anatomical preparations of fossil cycads and cycadeoids. During the year Dr. Earl E. Sherff, Research Associate in Systematic Botany, completed for publication his revision of the Hawaiian species of *Cheirodendron* and of the genus *Tetraplasandra* as it occurs in the Hawaiian Islands. His revision of the Hawaiian species of *Reynoldsia* and his descriptions of a new genus of trees (*Munroidendron*) from the Island of Kauai and of various new species and varieties, chiefly of tropical African Composites, have been published (see page 76).



When this forty-foot palm (*Copernicia vespertilionum*, center) was felled hundreds of small bats of a species apparently collected only once before fled from its dried foliage. Photographed in Oriente, Cuba, by Curator Emeritus B. E. Dahlgren.

As a result of the study of collections made in Venezuela by Dr. Julian A. Steyermark, Curator of the Phanerogamic Herbarium, the second part of *Contributions to the Flora of Venezuela* (Steyermark and collaborators), which contains descriptions and illustrations of new species of the families Droseraceae through Umbelliferae, was published by the Museum in December. The third part of this work, which will conclude the descriptions of new species, is in the press. Curator Steyermark, as honorary research associate of Missouri Botanical Garden, made several field trips in connection with

his investigation of the flora of Missouri. Much time was devoted to curatorial work associated with miscellaneous determinations and to preparation for publication of several parts of the *Flora of Guatemala* (Standley and Steyermark). The third part of the *Flora* was published in April by the Museum.

In August the first part of *Orchids of Guatemala* by the late Professor Oakes Ames (director of the Botanical Museum of Harvard University, 1935-50) and Dr. Donovan Stewart Correll (United States Department of Agriculture, formerly research associate at the Botanical Museum of Harvard University) was published by the Museum as a companion volume to the *Flora of Guatemala* (Standley and Steyermark). *Orchids of Guatemala*, the second part of which will appear in the spring of 1953, is the only complete and definitive treatment of the orchids of a tropical American country. The first part opens with a simple explanation of the unique structure of this plant family and contains detailed descriptions and discussions of 29 genera, with 321 species and varieties, based on botanical specimens assembled from 1831 to the present by more than seventy-five collectors. The interesting comments on many economically important cultivated orchids will be of value to orchid lovers and horticulturists. All of the genera and many of the species are illustrated by accurate and exquisite line-drawings, the work of the widely known botanical artists Blanche Ames (Mrs. Oakes Ames), Gordon Winston Dillon, Dorothy O. Allen (Mrs. Paul H. Allen), Elsie H. Froeschner, Eleonar B. Phillips, and Douglas E. Tibbitts (of the Museum).

Dr. José Cuatrecasas, former Curator of Colombian Botany, completed his John Simon Guggenheim Memorial Foundation Fellowship in the summer and continued his work on the flora of Colombia with the aid of a grant from the National Science Foundation. In this connection he studied a number of families of flowering plants as represented in his own extensive collections as well as numerous specimens received on loan from the United States National Museum, New York Botanical Garden, Herbario Nacional Colombiano, and Facultad de Agronomía del Valle. Dr. Friedrich Ehrendorfer, Jr., Fulbright Fellow on leave from the Botanical Institute of the University of Vienna, spent one month at the Museum finishing his revision of the genus *Relbunium* and preparing keys for identification of the American species of *Galium* (Rubiaceae). Some reorganization of the unmounted collections was done by John W. Thieret, Chicago Natural History Museum Fellow of the University of Chicago, who also identified a number of collections made in Cuba by Curator Macbride and, under the

direction of Chief Curator Just, worked on his thesis, a morphological and taxonomic study of the seeds of the Scrophulariaceae of the eastern United States.

A grant from the Wenner-Gren Foundation for Anthropological Research aided the work of Dr. Hugh C. Cutler, Curator of Economic Botany, on archaeological material excavated by the Museum's Southwest Archaeological Expeditions of the past few years. In connection with this research, experimental plantings were made near Chicago of seed collected in Mexico and the Southwest. He also continued reorganization of the Museum's wood collections. Mrs. Ann Bigelow and Robert Yule prepared and labeled specimens for the wood collections and cleaned and sorted plant material.

Dr. Francis Drouet, Curator of the Cryptogamic Herbarium, continued historical research on the algae in collaboration with William A. Daily, of Butler University, and named numerous specimens of algae received for identification. Dr. Hanford Tiffany, Research Associate in Cryptogamic Botany, published, in collaboration with Dr. Max E. Britton, also of Northwestern University, *The Algae of Illinois* (University of Chicago Press), a comprehensive illustrated analysis of the algal flora of Illinois that should stimulate interest in phycology both locally and generally. Donald Richards, Research Associate in Cryptogamic Botany, collected bryophytes in Minnesota and Arkansas. Dr. E. P. Killip, Research Associate in Phanerogamic Botany, devoted considerable time to study of the algal flora of Big Pine Key, Florida.

Accessions—Botany

The largest gifts this year to the phanerogamic herbarium include a great number of plants of the United States (nearly 13,000), among them 11,208 plants from eastern and central United States, over 1,000 from Missouri, 315 from Kentucky, and 173 from Florida. The largest collection of plants acquired through exchange came from Honduras (1,668). Other exchanges came from Venezuela and Ecuador (669), Colombia and United States (492), Sweden and China (417), Africa and Belgium (412), and Chile and Argentina (153). Through exchange 691 hand samples of woods of the United States were received from the College of Forestry, State University of New York, Syracuse. Valuable purchases of plants from areas not well represented in the phanerogamic herbarium include 1,339 specimens from Bolivia and Chile, 395 from Mexico and Honduras, 147 from Colombia, and 80 from South Africa.



A small tree, *Clavija glandulifera* Cuatr., is a new species of Theophrastaceae from the rain forest of Colombia discovered and described by Dr. Jose Cuatrecasas.

Outstanding among gifts to the cryptogamic herbarium are the historically important collection of 1,140 algae from Central Europe (Naturhistorisches Museum, Vienna), the collection of bryophytes (391) made by Dr. Donovan Stewart Correll along the Alaskan Highway, the algae (732) collected in the southwestern United States by Curator Macbride, the algae (429) of North and South America, Oceania, and Hawaii from Dr. Maxwell S. Doty, and the algae of Indiana (157) from William A. Daily. Exchange relations were maintained with many large American and European herbaria. More than 17,000 specimens were purchased through appropriations from the Donald Richards Fund. The largest collection

contains 12,228 lichens of the Rocky Mountains, purchased from Dr. Henry A. Imshaug, Ann Arbor. Other purchases were 1,810 lichens of Sweden, 1,000 algae of France and dependencies, 470 bryophytes and algae of Japan, 413 cryptogams of Wisconsin, and 300 algae and mosses of Gaspé Peninsula and New Jersey.

Approximately 22,500 plants were mounted in the phanerogamic herbarium during the year. Before they were mounted, it was necessary to dip-poison the specimens with bichloride of mercury. The work of poisoning was done by Miss Maruja Kalinowski, Miss Olive Doig, and Mrs. Jennie Pletinckx. Mrs. Pletinckx filed in the herbarium thousands of specimens, including those returned from loans. In the cryptogamic herbarium Mrs. Effie M. Schugman, with assistance during part of the year, mounted the P. O. Schallert Collection of cryptogams purchased in 1951 and numerous other collections of specimens, photographs, and descriptions.

Exhibits—Botany

Notable progress was made in Hall 26 (Charles F. Millsbaugh Hall, North American Trees) with the work, begun four years ago, of replacing photographs of branches with three-dimensional models. Eight reproductions of leafy branches were added to the exhibits: blue ash (*Fraxinus quadrangulata*), black locust (*Robinia pseudo-acacia*), sycamore (*Platanus occidentalis*), American holly (*Ilex opaca*), bitternut (*Carya cordiformis*), red maple (*Acer rubrum*), dogwood (*Cornus florida*), and paper birch (*Betula papyrifera*), all of which are the work of Preparator Frank Boryca and Artist-Preparators Milton Copulos and Samuel H. Grove, Jr. Two restorations by Curator of Exhibits Emil Sella, one of the southern white cedar (*Chamaecyparis thyoides*) and the other of the bald cypress (*Taxodium distichum*), were also placed on exhibition in Hall 26. Reinstallation of the flowering-plant exhibits in Martin A. and Carrie Ryerson Hall (Hall 29, Plant Life), under the direction of Curator Sella, is gradually reaching the final stage. During the year the family exhibits of orchids, bananas, marine algae, fungi, lichens, horsetails, and clubmosses were reconditioned and rearranged. An important addition to the synoptic installations in the hall is a reproduction by Curator Sella and Artist-Preparator Grove of an attractive cultivated Korean species of spindle-tree (*Euonymus hamiltonianus* var. *yedoensis*) of the Celastrus family shown in its fruiting stage. Preparator Mathias Dones, as in previous years, assisted with all installations in the halls and rebuilt several exhibition cases.

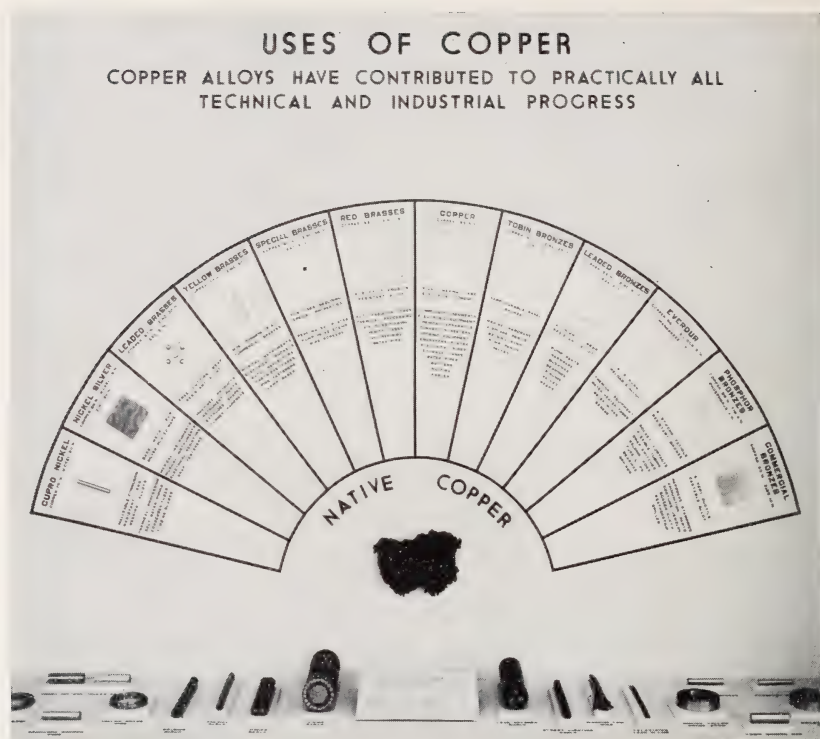
Department of Geology

Research and Expeditions

Eugene S. Richardson, Jr., Curator of Fossil Invertebrates, spent most of the year studying a fine collection of Early Silurian trilobites and other invertebrates from Channahon, Illinois, brought together by George Langford, Curator of Fossil Plants, before he joined the Museum staff. These studies were mainly revisionary, but new illustrations of some of the species were included. A valuable by-product of Curator Langford's assiduous collecting of fossil plants in the Coal-age deposits near Braidwood and Coal City, Illinois, has been an ever-growing accumulation of fossil invertebrates and fossil fishes that lived in the coal swamps. Only a very small percentage of fossil-bearing nodules from the Braidwood strip-mines yield these animal fossils, but over a period of several years the Museum collection has been enriched by several hundred fine specimens. During the year Curator Richardson studied several species of fossil insects from this fauna and prepared descriptions. Insects of the Coal age rank among the most interesting and valuable of all fossils because they are the first known representatives of what is today the largest group of the animal kingdom.

Curator Langford continued to devote most of his time to cataloguing, preparing, and identifying Upper Cretaceous and Lower Eocene plants from the clay deposits of western Tennessee. He also prepared a manuscript about these plants, with full descriptions and illustrations of 575 species, many of which have never before been referred to in the literature of the subject. As in previous years Curator Langford made several short collecting-trips to the Pennsylvanian formations west and southwest of Wilmington, Will County, Illinois. He was accompanied, at one time or another, by Mrs. Langford, Dr. and Mrs. R. H. Whitfield, Associates in Fossil Plants, or Curator Richardson. In October Curator Langford took one trip of ten days with Curator Richardson to Mecca, Indiana, and to western Tennessee, where they collected in three formations of the Wilcox group, Early Eocene, and in the Ripley formation of the Late Cretaceous. The specimens of flora from all five formations have yielded a great number of specimens of many species and many new species not recognized in the published references.

Studies made by Robert K. Wyant, Curator of Economic Geology, varied from time to time during the year. To co-operate with the work on meteorites at the National Museum, Washington, D.C.,



A specimen of native copper, various types of copper alloys, and products made of copper are displayed in a new exhibit in the Hall of Economic Geology (Hall 36).

he redetermined the specific gravity of the La Porte, Mapleton, and Smithonia meteorites, using a more accurate method of density determination. He also isolated the mineral schreibersite in the La Porte and Mapleton meteorites and examined it qualitatively. Troilite was determined quantitatively in the Pantar Llano meteorite. Other work was quantitative analyses of sedimentary rocks from the Rio Torolo district in El Salvador, paragenesis of lead and zinc specimens from Illinois, Missouri, and Colorado, and qualitative determination of minerals in carbonate rocks from Illinois. In connection with preparation of manuscripts he made numerous thin-sections of rocks, took microphotographs of specimens, and drafted field-maps. During September he collected from mining localities in Utah, Arizona, and Colorado several hundred rock and ore specimens, which were added to the study collections.

Dr. Rainer Zangerl, Curator of Fossil Reptiles, completed a monographic study of turtles of the family Toxochelyidae, including descriptions of specimens collected over a period of years in the Mooreville formation of Alabama, which, with the revision of the family Protostegidae, is in the press. He is currently engaged in describing some well-preserved specimens of sea turtles from the Early Oligocene shale of Glarus, Switzerland. The specimens have only recently been prepared for study at the University of Zurich, although reference to one of them was made in geologic literature as early as 1758. He spent three months in the Vorarlberg district of western Austria to explore a fossil locality in a Triassic bituminous limestone. His principal objective was to determine the frequency of occurrence of vertebrate fossil remains in these shales and the stratigraphic position within a large and structurally complicated section. The major work consisted of quarrying out about thirty cubic meters of shale along the Plattenbach valley near Bludenz. Numerous reptile and fish bones and scales were collected, but no large aggregation of skeletons was found.

Dr. Robert H. Denison, Curator of Fossil Fishes, continued his studies of Early Devonian fishes from northern Utah. His work on the second group of primitive jawless vertebrates, the Heterostraci, is nearing completion and he has started preparation and preliminary investigation of the arthrodires. As an adjunct to his study of the morphology, relationships, and ecology of the earliest vertebrates he completed preparation of the specimens of Silurian Heterostraci that he collected in 1951 in fossil-fish localities of eastern states. He spent July and August in the field in the Maritime Provinces of Canada, where he collected vertebrates from the Silurian rocks of southern New Brunswick and from the Devonian of Nova Scotia, northern New Brunswick, and the Gaspé Peninsula. Two specimens of an extremely rare, small, armored, fish-like ostracoderm (Heterostraci) were obtained from the mid-Silurian rocks of southern New Brunswick, where they were found associated with a larger, more common, small-scaled ostracoderm (genus *Thelodus*). Along the shore of Northumberland Straits in Nova Scotia a number of earliest Devonian ostracoderms (Heterostraci and Osteostraci) were quarried out of the red sandstones and mudstones of the Knoydart formation. They are the first well-preserved specimens of this age from North America.

As reported last year, Bryan Patterson, Curator of Fossil Mammals, left for Argentina near the end of 1951 to devote 1952 and the early part of 1953 to the study of South American fossil vertebrates, especially those from the Cenozoic formations. His primary

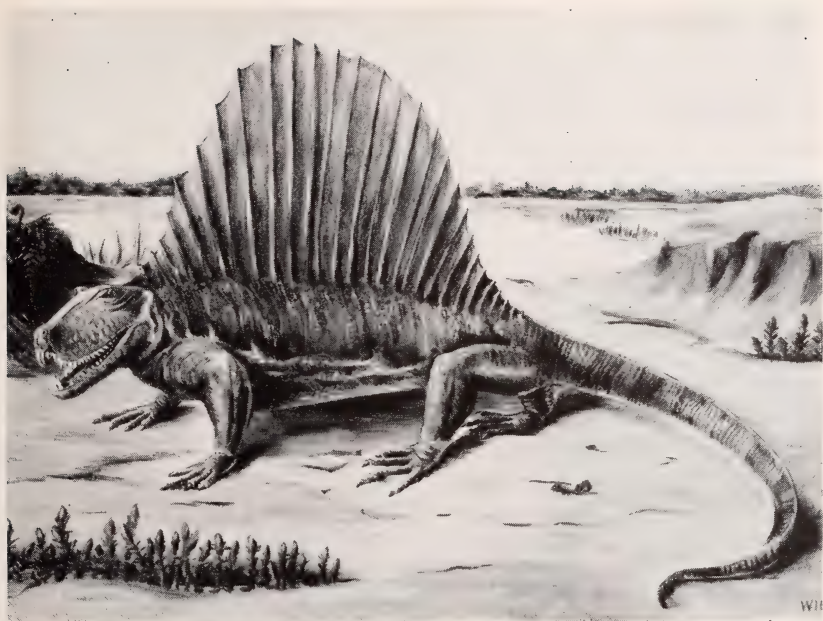
object is to make first-hand observations and to gather data that will facilitate his work on the collections of fossil mammals made by the Marshall Field Paleontological Expeditions to Argentina and Bolivia during 1922-24 and 1926-27 under the leadership of the former Curator of Paleontology, Elmer S. Riggs. The opportunity to carry out these studies was afforded by the award of a John Simon Guggenheim Memorial Foundation Fellowship to Curator Patterson. Most of his time was spent in Buenos Aires at the Museo Argentino de Ciencias Naturales, where he was given unrestricted co-operation and accorded hospitality seldom enjoyed elsewhere by a visiting member of a foreign institution. For this, the Museum extends its grateful appreciation to the Argentine museum.

Routine administrative work and writing labels for the new Hall of Physical Geology (Hall 34) occupied most of the time of Dr. Sharat K. Roy, Chief Curator. Monographs on the fresh-water limestone from El Salvador and on the Pantar meteorite were begun early in the year, but neither was quite completed. Both studies were made in collaboration with Curator Wyant, who was chiefly responsible for the advanced stage of the manuscripts at the end of the year. A paper on the geology of the polar regions was completed and awaits publication. Work on the catalogue of meteorites continued, and Chief Curator Roy spent three weeks at the National Museum, Washington, D.C., checking references.

Mrs. Priscilla F. Turnbull, Assistant in Fossil Vertebrates, took charge of two manuscripts by Curator Patterson and did creditable work in putting them into shape. She also furnished him with information regarding specimens and literature not available in Argentina and supervised taking hundreds of photographs sent to him to expedite his studies. She assisted the Chief Curator with a substantial part of the routine work of the department. Chief Preparator Orville L. Gilpin and William D. Turnbull, Preparator, spent six weeks collecting in the Trinity sands of northern Texas. Washing and sorting this material continued at the Museum and twenty-six Early Cretaceous mammal-specimens were gained.

Accessions—Geology

An important addition to our collection of fossils from the Chicago area is the gift of 104 fossil invertebrates from the Early Silurian Alexandrian limestone of Channahon, Illinois, collected by Curator Langford some years ago. A gift from St. Mary's Seminary, Techy, Illinois, of 59 fossil invertebrates includes two species from



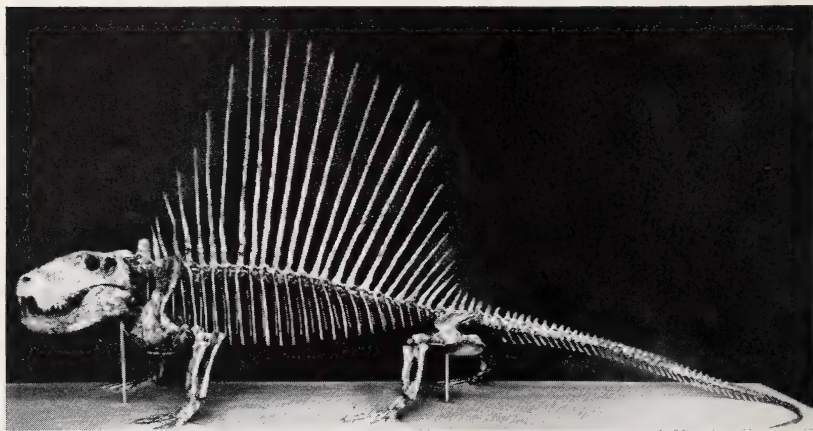
Reconstruction of *Dimetrodon grandis*, painted by Miss Maidi Wiebe, Department of Geology, is shown with the skeleton exhibited in Ernest R. Graham Hall.

the famous Middle Cambrian Burgess shale, British Columbia, that were collected originally by Dr. Charles D. Walcott about 1910 and still bear his locality notations. The Burgess shale fauna is restored in a habitat group in Hall 37 (Frederick J. V. Skiff Hall, Fossil Invertebrate Animals and Fossil Plants), the only such habitat group in existence, but these specimens are the first from that famous bed to be included in the Museum collection. By exchange with the University of California a collection of 110 species (213 specimens) of marine fossil-invertebrates characteristic of the West Coast was gained. Among additions to the collection of fossil vertebrates are two splendid skeletons of Pleistocene moas received in exchange from Canterbury Museum at Christchurch, New Zealand; 32 Early Permian fossil reptiles collected by Dr. Everett C. Olson, Research Associate, gift of the University of Chicago; and the cranium of a muskox collected many years ago in Iowa by August G. Becker, gift of Raymond B. Becker. To the gem collection were added four synthetic rutile stones and a boule, gifts of Kenya Gem Corporation and Jarra Gem Corporation.

Exhibits—Geology

Substantial progress in the installation of exhibits in the new Hall of Physical Geology (Hall 34) has been made. Plans call for thirty-seven exhibits, ten of which were installed during the year. Physical geology is the backbone of the earth sciences, and so all efforts are being made to present this difficult subject to the public in as clear-cut fashion as the resources of the Museum will permit. With experience gained from the installation of exhibits in Hall 37 (Fossil Invertebrate Animals and Fossil Plants, Frederick J. V. Skiff Hall), there is reason to believe that the new hall will be outstanding. Directly participating in the program are Chief Curator Roy, Curator of Exhibits Harry E. Changnon, Preparators Henry Horback and Henry U. Taylor, and Miss Maidi Wiebe. Death has removed John Conrad Hansen, Artist, who served the Department of Geology diligently and brilliantly for the past fourteen years. Miss Wiebe, who has taken his place, has the training to be a worthy successor. Three exhibits displaying six skeletons of Permian reptiles—*Dimetrodon*, *Ophiacodon*, *Sphenacodon*, *Varanops*, *Casea*, and *Aulaccephalodon*—were installed in Ernest R. Graham Hall (Hall 38, Fossil Vertebrates). With the installation of another reptile, *Edaphosaurus*, the series of exhibits showing the Permian amphibians and reptiles received from the University of Chicago will be completed. The skeletons were partially prepared and remounted by Chief Preparator Gilpin and Preparator Stanley Kuczek.

This skeleton of the reptile *Dimetrodon grandis* is now in Ernest R. Graham Hall.



Department of Zoology

Research and Expeditions

A report on a collection of West African rodents received from the Companhia de Diamantes de Angola was finished by Colin Campbell Sanborn, Curator of Mammals, who continued his special interest in bats, with a by-product of notes for publication and some progress on his larger work reviewing the genus *Rhinolophus*. Work on the mammals of Peru was continued. Philip Herskovitz, Assistant Curator, after his return from Colombia in September continued study of the mammalian fauna of that country. The final nine months of his Colombian field work, begun in 1948 as a survey of the mammals of the most varied of the Andean countries, were devoted to Bogotá and the region of the Caquetá, one of the head-water streams of the Amazon. Luis de la Torre, Associate, while a graduate student at the University of Michigan continued his study of Guatemalan mammals and again visited Guatemala under the auspices of the Museum for field work in the southeastern corner.

In late February Curator Sanborn went to the Aleutian Islands with the special mission of collecting sea otters for a long-projected habitat group for the Hall of Marine Mammals (Hall N). With the aid of personnel of the United States Fish and Wildlife Service, United States Air Force, and Arctic Health Research Center, Curator Sanborn was able to spend twelve days on Amchitka Island, accompanied by Major Robert Rausch. With the valuable advice and aid of Robert D. Jones, Jr., who had charge of the program of sea-otter conservation and lived on Amchitka, photographs for reference in preparation of the background of the exhibits, accessories for the foreground, and three specimens of sea otter were obtained. If all who contributed time and material aid to the progress of this expedition could be named, the roster would be one of the largest in the history of the Museum.

The continuing researches of Dr. Austin L. Rand, Curator of Birds, resulted in a number of published papers and in manuscripts in press or in preparation on such varied regions as Nepal, the Philippines, southwest Asia, West Africa, and Tristan da Cunha. Curator Rand's work, mainly on Old World birds, was supplemented by the work of Associate Curator Emmet R. Blake on collections from the New World. Associate Curator Blake was occupied throughout the year with his *Birds of Mexico, A Guide for Field Identification*, which is scheduled for publication early in 1953 by the



These specimens of the very rare mountain paca *Stictomys taczanowskii*, a rodent that never before has been photographed, were live-trapped in southern Colombia.

University of Chicago Press. This handbook is suited to the needs of both the novice and the specialist. Comprehensive in scope, it describes almost one thousand species and more than two thousand geographical varieties of birds that occur in Mexico. Of these, 329 species are illustrated by black-and-white line-drawings. All of the illustrations, including a frontispiece in color of a Mexican toucan (the collared aracari), are the work of Douglas E. Tibbitts, Illustrator, of the Museum staff. The Associate Curator began research on the Mönniche Collection from Panama, and by the end of the year he had also identified the birds collected by Assistant Curator HersHKovitz in the course of his Colombian field work. This material contained a new tinamou related to the large black species described from Peru by the late Boardman Conover in 1949. Research by the staff was much aided by the continued curatorial assistance of Mrs. Ellen T. Smith, Associate, especially in the rearrangement of the game-bird collections incorporated with the Conover Collection received in 1951.

The work of the West Africa Zoological Expedition in French Equatorial Africa and Angola, begun in 1950, was concluded at the end of the year. In addition to a small by-product of mammal specimens and bird skeletons, nearly two thousand specimens of birds have been received, and the final material from this expedition

is expected early in 1953. Field Associate D. S. Rabor continued collecting in the Philippine Islands, adding more than three hundred birdskins to the collection by his field work in Mindanao and Negros islands. Work of the Buchen East Africa Expedition, financed and led by Walther Buchen, Trustee, is described on page 30.

The principal research in the Division of Amphibians and Reptiles was the programmed studies of Curator Clifford H. Pope on North American salamanders, to which his second expedition to Mexico was also chiefly directed. As in 1951, a special effort was made to collect salamanders from the escarpment of the Mexican plateau, where the species of the mainly North American family Plethodontidae have undergone a remarkable diversification that has resulted in a bewildering variety of closely related forms and therefore afford an opportunity to study evolution in progress. Hymen Marx, Assistant, prepared two short papers on snakes received from Field Associate Harry Hoogstraal, who is stationed in Cairo. Stanley Rand, temporary assistant, completed a report on the collection of amphibians and reptiles that he made in El Salvador in 1951. The comprehensive study of Philippine amphibians, begun by Assistant Curator Robert F. Inger before his transfer from the Division of Reptiles to the Division of Fishes, was completed by the end of the year for publication.

In the course of the year Dr. Karl P. Schmidt, Chief Curator, found time to return actively to herpetological studies, mainly in the taxonomy of the venomous snakes of the genus *Micrurus*, and to studies of the fauna of southwestern Asia. Two papers were completed to report his personal acquaintance with the remarkable New Zealand reptile, the tuatara, made on the occasion of his attendance of the Seventh Pacific Science Congress in 1949. At the end of the year the Chief Curator's manuscript for a new edition of *Checklist of North American Amphibians and Reptiles*, begun in 1946, had been closed and sent to the University of Chicago Press to be published by the American Society of Ichthyologists and Herpetologists. Miss Laura Brodie, Assistant, continued the measuring and marking of blue racers from a hibernation aggregation of this local species of snake in the Indiana dunes region.

In the Division of Fishes Curator Loren P. Woods continued his investigations of the fish fauna of the Gulf of Mexico, in which study his interest centers on taxonomy and relation of distribution to depth and nature of the bottom. Late in the year he and Assistant Curator Inger participated in another exploration cruise aboard the motor-vessel *Oregon* of the United States Fish and Wildlife Service. They again reached Campeche Banks in the southern

Gulf of Mexico and were able, for the first time, to collect reef fishes by the technique of poisoning with rotenone. The large collections from the Gulf Coast of Texas, presented by the Texas Game, Fish and Oyster Commission, have been especially important to the Division of Fishes because of its continuing interest in the Gulf of Mexico, and these collections have yielded an unexpected series of undescribed species. A review by Curator Woods of the squirrel fishes (*Holocentrus*) is now in press. Assistant Curator Inger completed an ecological study of the brackish and fresh-water fishes of Borneo that he collected on the Borneo Zoological Expedition of 1950, including in his paper information on feeding habits of fishes of tropical fresh-water streams. He also studied the fishes of an off-shore coral reef, from which he had obtained the first such collection available from Borneo. Woods and Inger have continued their joint studies of cave fishes of the central United States in search of clues to the relation of the family Amblyopsidae with other groups of fishes. Mrs. Marion Grey, Associate, has continued work on a checklist of fishes found below one-thousand fathoms and study of deep-sea fishes of the genus *Tetragonurus*.

The research of the Division of Vertebrate Anatomy continued to center around the anatomy of the giant panda and related carnivores, with detailed study of the architecture of the masticatory apparatus and of the pelvis. Notable progress was made during the year on the drawings to illustrate the monograph on the giant panda, work now in the hands of Miss Phyllis Wade, assistant. The masticatory apparatus of the South American spectacled bear (*Tremarctos*), which resembles that of the giant panda, was studied and a special report embodying the results was prepared by Curator D. Dwight Davis for publication. In continuation of his interest in animal behavior he wrote a paper on the remarkable defensive behavior of a helmeted iguanid lizard that was received alive from Central America. He is preparing a manuscript describing the mammals collected by the Borneo Zoological Expedition of 1950 and, with Dr. Waldemar Meister, of Chicago College of Osteopathy, completed a report on the fetal membranes and placenta of the white shrew (*Echinorex gymnura*), one of the most generalized of living mammals. Research Associate R. M. Strong continued his work on the anatomy of the large American salamander *Necturus* and on the anatomy of various families of birds.

Early in the year Curator Rupert L. Wenzel of the Division of Insects terminated his study of type specimens of New World hispterid beetles in the collection of museums in London, Paris, and Genoa and returned to Chicago. Dr. Charles H. Seevers, Research

Associate, continued his study of the staphylinid beetles associated with termites and completed the first draft of a monograph on these remarkable insects, important additions to which work are based on material in the Bernhauer Collection acquired in 1951 from Vienna. Field work was limited to a six-week trip by Associate Curator Henry S. Dybas to California by way of the Southwest in April and May to obtain a representative sample of the minute insects of the forest floor and similar niches in the areas visited. He obtained much valuable material, including many interesting specimens of the minute feather-winged fungus-inhabiting beetles of the family Ptiliidae, object of his special studies for many years.

Supplementary material in a new exhibit of perching songbirds in Hall 21, such as the knot-tying diagrams and the nest in this panel, gives variety to the display.



Dr. Fritz Haas, Curator of Lower Invertebrates, spent five weeks in Cuba studying the remarkable local distribution of land snails. In this work he received the cordial aid of his colleagues at the University of Havana and of other students and collectors. Later in the year he spent two weeks in examination of the beach fauna of Lake Worth, Florida, where he was also cordially received by the enthusiastic local group of collectors and students of shells. Studies of the collections made on these trips are in progress. Other research was a by-product of curatorial duties in the course of revision of the material of various families of land snails in the Museum collections, mainly in the Walter F. Webb Collection. Also a by-product of rearrangement of the collections was the list of mollusks of the Solomon Islands completed by Alan Solem, assistant during the summer.

The continuing routine work of the Department of Zoology forms an essential background for both research and exhibition. Tanner Dominick Villa was aided by Celestino Kalinowski, Assistant Taxidermist, in the preparation of skins for exhibition, the care of the collection, and the remaking of study skins. Mrs. Dorothy B. Foss, Osteologist, continued to prepare skeletons of mammals, birds, and reptiles received from Brookfield and Lincoln Park zoos for the permanent reference collection that is essential both to vertebrate paleontology and to comparative anatomy. Curator Emeritus William J. Gerhard continued with the transfer of the Strecker Collection of moths and butterflies to new cases and arrangement of the pamphlet library. August Ziemer, Assistant, was engaged throughout the year in mounting insects for permanent storage. The work of Artist Margaret G. Bradbury for the various divisions contributed to the success of exhibits and technical papers.

Accessions—Zoology

Wide recognition of the Division of Insects as an active research center is reflected in the amount of type material presented, acquired by exchange, or made available for purchase. Exchange with the British Museum (Natural History), London, brought 538 histerid beetles for Curator Wenzel's special interest, and these include 197 cotypes. By purchase 203 paratypes from various groups of insects were acquired during the year. Gifts added 83 types and paratypes. The corrected figure for the Bernhauer Collection of staphylinid beetles, purchased in 1951 (see Annual Report, page 62), is 115,000 specimens. Of special importance to the research program of the

Division of Fishes are the gifts of 1,946 specimens (105 species) of marine fishes, from Dr. J. A. Ramos, of the Department of Biology, University of Puerto Rico; 1,329 specimens (about 55 species) of fresh-water fishes, from the Fisheries Department of the Colony of North Borneo; 230 fishes of the Gulf of Mexico, from the United States Fish and Wildlife Service; and 37 lots of marine invertebrates of the Gulf of Mexico, from the Texas Game, Fish and Oyster Commission. Valuable gifts of mollusks were received from Miguel L. Jaume and Dr. Mario Sanchez Roig, of Havana, Cuba; Dr. Argentino A. Bonetto, of Santa Fe, Argentina; Dr. Helmut Sick, of Rio de Janeiro, Brazil; and Dr. Otto Schubart, of São Paula, Brazil. Major gifts to the Division of Amphibians and Reptiles are 903 specimens from Dr. Harold Trapido, of Gorgas Memorial Laboratory in Panama, and 58 specimens from Captain Robert Guillaudeu, Korea, a volunteer assistant in past years. An outstanding purchase in the Division of Birds was the Mönniche Collection amounting to 1,595 specimens from the restricted region of the Volcan Chiriqui, the highest mountain in Panama. Other purchases of exotic birds include 350 from Tanganyika Territory, 464 from India, 82 from Southwest Africa, and two (of an extinct species) from New Zealand. The largest gift to the Division of Mammals was 982 mammals of Egypt and the Anglo-Egyptian Sudan, from departmental Field Associate Hoogstraal, who also generously gave birds, reptiles, amphibians, insects, and mollusks to the collections.

Exhibits—Zoology

The most important addition to the zoological exhibition halls during the year is the exhibit of wax models showing the mechanics and comparative anatomy of the muscles of vertebrates that was installed in the Hall of Vertebrate Anatomy (Hall 19). The models, some of which were made several years ago by Miss Nellie Starkson, were prepared by Artist Joseph B. Krstolich under the direction of Curator Davis. An exhibit of songbirds, third in a series of perching birds of the world, was installed in Boardman Conover Hall (Birds in Systematic Arrangement, Hall 21). The exhibit, prepared by Taxidermist Carl W. Cotton under the direction of Curator Rand, embodies several features that mark important improvements in exhibition technique, chief of which are grouping of related birds on raised panels in uniform poses, reduction of perch material, and addition of supplementary explanatory material such as nests and drawings. Taxidermist Ronald J. Lambert was occupied with

reinstallation of five exhibits in Albert W. Harris Hall (Hall 18, Reptiles, Amphibians, and Insects) of various turtles and lizards. The preparation of habitat groups of the Malay tapir and of the northern sea otter was under way during the year. The sea-otter scene will show a family group on the tidal rocks of Amchitka Island in the Aleutians where a protected colony of sea otters, once near extermination, now flourishes. The sea otters—a male, a female, and one youngster—have been mounted by Taxidermist Frank C. Wonder. The habitat group of the tapir, in the hands of Taxidermist Leon L. Walters, likewise was well advanced at the end of the year. Material for this group was obtained by the Rush Watkins Zoological Expedition to Siam in 1949. At the end of the year work was actively under way on the African marsh-bird group, for which the larger birds have been mounted and the papyrus and water-lily accessories are ready for installation. A motion-picture record of the construction of this group is being made by Taxidermist Lambert, which, with the films taken by the Buchen East Africa Expedition, will be the first complete record of a Museum habitat group from field to laboratory to exhibition hall.

Model showing the external muscles of a lizard is a detail from the new exhibit in Hall 19 that explains the mechanics of motion and shows how muscles function.



LIBRARY OF THE MUSEUM

The organization and growth of the Library of the Museum have been based on a systematic selective system of acquisition by purchase, by exchange with institutions in many countries, and by solicitation of publications from other educational organizations. The new acquisitions cited elsewhere in this Report (see page 96) are a measure of this activity during the year. However, a science library with a definite program of acquisition must foresee future needs so that it can avoid a fixed policy that may later confuse and impoverish the collection. The Museum Library therefore endeavors to acquire comprehensively in those fields where the material is related to its collection, but material is not purchased that is already represented adequately in other libraries where it is easily available unless some special reason requires its presence in the Museum. A review of the daily flow of incoming bibliographical material is effective in the Library's system of selection.

The Library's growth and activity has continued during the year at an accelerated rate. A total of 1,740 volumes was added to the collection by purchase, exchange, and gift and 809 volumes were withdrawn. As in past years gifts to the Library have been received in quantity, and I take this opportunity to thank all donors for their support. An example of the kind of gift received by the Library is E. J. C. Esper's *Die Schmetterlinge*, Charpentier edition [1829-39?], a notable gift from Cyril F. Dos Passos. The Museum further gratefully acknowledges the constant outstanding co-operation of John Crerar Library in placing in the Museum Library on indefinite loan or permanent loan important serials, such as *Encyclopedie Mycologique* (volumes 1 to 13).

Acquisition of publications does not produce a library, however. Classification and cataloguing are essential, and the catalogue of a library that engages in collecting research publications over many decades becomes a powerful bibliographic instrument of many uses. Although the catalogue of the Museum Library cannot be considered sufficiently exhaustive in any one field to satisfy the specialist, it has an advantage over general bibliography in that it not only lists, under the Library of Congress system, but also locates monographic publications and frequently indicates which monographs themselves contain bibliographies. Volumes reclassified in 1952 under Library of Congress classification totaled 5,560, and 22,028 cards covering this material were filed in the various catalogues. All new material received for the departmental libraries since September, 1947, has been classified under Library of Congress

classification and considerable parts of the anthropology and zoology libraries have been reclassified (including about three-fourths of the ornithology division and the entire reptile division) as well as parts of the botany and geology libraries. A total of 36,284 volumes has been classified since the beginning of the project, and 85,357 cards have been added to the new Library of Congress catalogue. In addition 1,592 analytics have been made for monographs.

Serial publications (periodicals, journals, etc.) present a special problem because they are by far the most numerous publications the Library receives and they are also the type of publication most used by the scientific divisions of the Museum. Most of this material is received by exchange with institutions all over the world. The fact that many organizations were receiving the Museum's publications while not fulfilling their part of the original agreement was disclosed through revision of old exchange agreements. Another result of this revision has been the establishment of important new exchange agreements. This access to the world-wide literary coverage of scientific and cultural progress in the Museum's own special subject-fields, so important to the work of all its divisions, is made possible largely by the cordial exchange relations maintained between the Museum and academies and learned societies, universities, museums, and other scientific and cultural organizations both at home and abroad. During the year 22,235 items (exclusive of books) were received in the Library, of which 7,649 represented serials recorded on the Kardex. In comparison, 9,539 items (exclusive of books) were received in the Library in 1948.

An important service of the Library is the translation into English of correspondence received for the entire Museum. Two hundred and seven communications were translated from French, German, Spanish, Portuguese, Italian, and Russian. Another important piece of work is the continued checking of the Library's serial holdings for inclusion in the forthcoming supplement of *Union List of Serials in Libraries of the United States and Canada*. The Museum Library reported many new titles and additions as well as revisions. This important co-operative undertaking of the principal libraries of this country and Canada results in the continuation of one of the most useful and time-saving of bibliographic tools.

The overcrowded condition of the Library's shelves, which has been a handicap to efficient use of the Library, has been relieved in part by the installation of additional shelving in both the botany and geology libraries and by withdrawal from the collection of material not falling directly within the scope of our interests. The proceeds from the sale of this material provided the means of

acquiring desiderata long on the Library's list. Accelerated activity in the Library's binding operations is indicated by 1,960 volumes bound in 1952 in comparison with the 750 volumes bound in 1951. The use of the Library for reference is increasing and many of the reference questions from outsiders require hours of painstaking research. Loan-desk records show that 2,585 volumes were borrowed by nonmembers of the Museum staff. Through interlibrary loan, an important service of the Library that immediately provides members of the Museum's scientific staff with data needed in research, 205 volumes were borrowed during the year.

PHOTOGRAPHY AND ILLUSTRATION

The Division of Photography made during the year a total of 20,032 negatives, prints, enlargements, and lantern slides for the Museum, other institutions, the press, and general sales. More than 110,000 negatives are now in the photography files. Miscellaneous art work supplied to the departments and divisions of the Museum during the year by Douglas E. Tibbitts, Staff Illustrator, includes labels, charts, map revisions, color studies, cartoons, and lettering. Major projects completed or nearly completed by him were illustrations for two series of "Museum Stories" and for six important scientific publications, among them *Birds of Mexico*, *A Guide for Field Identification* and *Orchids of Guatemala*.

PUBLIC RELATIONS

The Museum is now on the air visually as well as audibly from one to several times every day on every one of Chicago's four television stations. Publicity by television was begun by the Museum in September after long and careful planning and preparation. Officials of the television stations credit the Museum with the distinction of being the first educational institution in Chicago to use the technique of spot announcements and pictures on this newest medium of communication day by day through every local outlet as a means of calling attention to scientific and cultural activities. It is particularly appropriate that the Museum should be a leader in using television in this way because it pioneered in educational programs in 1940 when television was still in an experimental stage with but one telecasting station and about one hundred receiving sets in Chicago. In the years since these small beginnings, during which

television has developed as a major means of communication with the public, representation on many programs had been arranged by H. B. Harte, Public Relations Counsel. In 1952 steps were taken to expand use of the new medium on a regular schedule.

The present Museum project was put into operation by Miss Christine Tardy, of the Public Relations staff, who contacted officials of the television stations in Chicago and arranged for the Museum to use a part of the time they are required to devote to unpaid-for public-service telecasts. In conferences with executives and technicians of each station—WBKB (American Broadcasting Company—Paramount Theaters, Inc.), WBBM-TV (Columbia Broadcasting System), WGN-TV (*Chicago Tribune*—Dumont Television Network), and WNBQ (National Broadcasting Company)—suitable formats were established and the groundwork in technical requirements was laid for the Museum's part of the operations. The Museum is indebted to the personnel of the television stations and to the companies owning the facilities for their fine co-operation and generous allocation of time. The television stations have furnished reports indicating that the time given free of charge to the Museum during the last four months of the year in which service was instituted, if billed at commercial television-advertising rates, would have cost more than \$32,000.

The Museum's televised messages are not commercial and are intended only to bring visitors to the Museum by publicizing current activities, such as lectures, motion pictures, or special exhibits, and by stimulating interest in natural history. In addition to the daily television spots the Museum was represented in a number of fifteen-minute and half-hour programs under various sponsorships, in which members of the Museum's scientific staff took part or properties furnished by the Museum were used. Plans have been made for the Museum to participate in series of full-length programs now in preparation.

The number of publicity releases prepared for the press by the Division of Public Relations was 420 in comparison with 258 for the year before. These news-stories often resulted in special articles and picture-layouts in leading newspapers and in magazines such as *Holiday*, *Pageant*, and *London Illustrated News*. During the summer the *Chicago Sun-Times* became interested in the Museum's Southwest Archaeological Expedition and sent its own staff correspondent to New Mexico to write a series of on-the-spot feature stories. For coverage of Museum news and pictures throughout the year the Museum thanks the local press, particularly the *Chicago Daily News*, *Chicago Herald-American*, *Chicago Sun-Times*, and *Chicago Tribune*,



Presentation of flags to winning troops of Girl Scouts from the Chicago area was climax of a nature-study project sponsored at the Museum by Brook Hill Farms, Inc.

and, for national and international news coverage, the Associated Press, International News Photos, International News Service, Science Service, and United Press Association. Special thanks are given to the City News Bureau of Chicago, which makes its pneumatic tubes to all Chicago newspaper offices available for the transmission of news releases from the Museum. An additional source of publicity is the Museum *Bulletin*, which is published regularly each month and distributed to Members of the Museum, scientific and civic institutions, and the press.

For providing time and facilities for widespread radio publicity the Museum thanks the following networks and stations: American Broadcasting Company, Columbia Broadcasting System, Mutual Broadcasting System, National Broadcasting Company, WMAQ, WGN, WIND, WBBM, WENR, WLS, WJJD, WAIT, WAAF, WBIK, WCFL, WCRW, WEAU, WEDC, WFJL, WFMF, WFMT, WGES, WHFC, WHIP, WLEY, WNMP, WOPA, WSBC, and WXRT. The Museum's lecture courses for adults and the programs for children presented by Raymond Foundation were advertised, as in past years, by posters on station platforms and in passenger coaches through the continued co-operation of the Chicago, Aurora and Elgin Railroad, Chicago and North Western Railway, Illinois Central System, and Chicago Transit Authority.

PUBLICATIONS AND PRINTING

During the year 16,719 publications of the Museum were distributed in exchange with both domestic and foreign institutions and forty-five new exchange agreements were established. A comprehensive revision of the Museum's exchange relationships was continued in an effort to conform closely to the needs and interests of the more than 1,300 institutions and scientists with whom the Museum exchanges publications (see page 60). Sales totaled 50,784 copies.

The Museum printed during the year eighteen publications in its scientific series, two (one reprint) in its popular series, one annual report, and one index to volumes. The total number of copies printed was 42,487 of which 41,537 copies were printed by letterpress, with a total of 1,968 pages of type composition, and 950 copies were printed by the Vari-type-offset process, with a total of 205 pages of Vari-type composition. Twelve numbers of Chicago Natural History Museum *Bulletin* were printed, averaging 6,000 copies an issue. Other work totaled 1,060,224 impressions. Two series of "Museum Stories" and miscellaneous work by the Vari-type-offset process totaled 334,464 impressions.

The following publications were issued by the Museum:

DEPARTMENT OF ANTHROPOLOGY

HAMBLY, WILFRID D.

Bibliography of African Anthropology, 1937-1949, Supplement to Source Book of African Anthropology, 1937, Fieldiana: Anthropology, vol. 37, no. 2, 140 pages

MARTIN, PAUL S., JOHN B. RINALDO, ELAINE BLUHM, HUGH C. CUTLER, AND ROGER GRANGE, JR.

Mogollon Cultural Continuity and Change, The Stratigraphic Analysis of Tularosa and Cordova Caves, Fieldiana: Anthropology, vol. 40, 527 pages, 179 illustrations

MARTIN, RICHARD A.

Mummies, Popular Series, Anthropology, no. 36, 18 pages, 20 illustrations (reprint)

DEPARTMENT OF BOTANY

AMES, OAKES, AND DONOVAN STEWART CORRELL

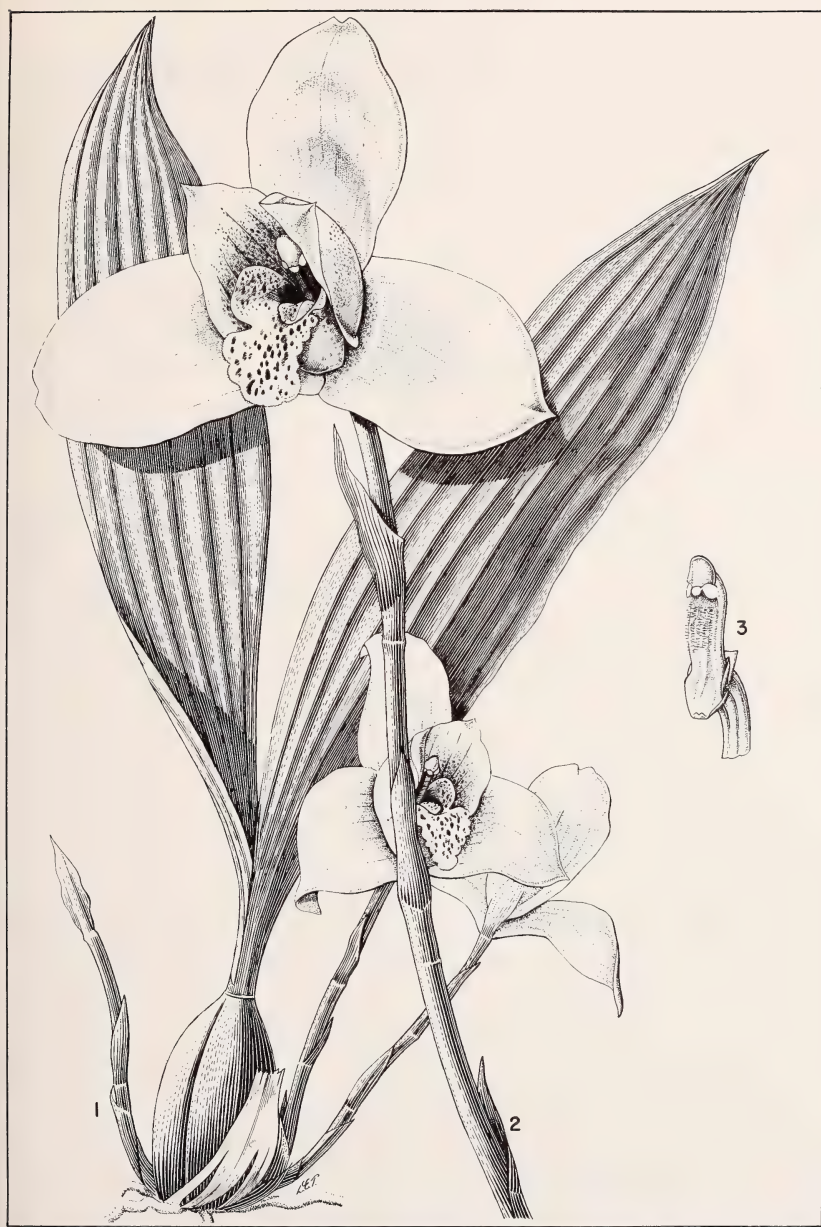
Orchids of Guatemala, Fieldiana: Botany, vol. 26, no. 1, 407 pages, 109 illustrations

STANDLEY, PAUL C., AND JULIAN A. STEYERMARK

Flora of Guatemala, Fieldiana: Botany, vol. 24, part 3, 436 pages, 56 illustrations

STEYERMARK, JULIAN A., AND COLLABORATORS

Contributions to the Flora of Venezuela, Fieldiana: Botany, vol. 28, no. 2, 205 pages, 54 illustrations



Lycaste virginalis, national flower of Guatemala, is the frontispiece of a recent Museum publication, No. 1 of "Orchids of Guatemala" (1-flowering plant, 2-flower and peduncle, 3-column front-side; all reduced). Drawing by Douglas E. Tibbitts.

DEPARTMENT OF GEOLOGY

DENISON, ROBERT H.

Early Devonian Fishes from Utah, Part I. Osteostraci, Fieldiana: Geology, vol. 11, no. 6, 23 pages, 11 illustrations

OLSON, EVERETT CLAIR

Fauna of the Upper Vale and Choza: 6, Diplocaulus, Fieldiana: Geology, vol. 10, no. 14, 20 pages, 7 illustrations

SINCLAIR, G. WINSTON

A Classification of the Conularida, Fieldiana: Geology, vol. 10, no. 13, 11 pages, 1 illustration

DEPARTMENT OF ZOOLOGY

BOULTON, RUDYERD, AND AUSTIN L. RAND

A Collection of Birds from Mount Cameroon, Fieldiana: Zoology, vol. 34, no. 5, 30 pages

HAAS, FRITZ

On the Mollusk Fauna of the Land-locked Waters of Bermuda, Fieldiana: Zoology, vol. 34, no. 8, 5 pages

South American Non-Marine Shells: Further Remarks and Descriptions, Fieldiana: Zoology, vol. 34, no. 9, 26 pages, 27 illustrations

KANAZAWA, ROBERT H.

More New Species and New Records of Fishes from Bermuda, Fieldiana: Zoology, vol. 34, no. 7, 30 pages, 4 illustrations

RAND, AUSTIN L.

Secondary Sexual Characters and Ecological Competition, Fieldiana: Zoology, vol. 34, no. 6, 6 pages, 2 illustrations

SANBORN, COLIN CAMPBELL

Philippine Zoological Expedition, 1946-1947, Mammals, Fieldiana: Zoology, vol. 33, no. 2, 72 pages, 14 illustrations

SCHMIDT, KARL P.

A New Leptodactylid Frog from Chile, Fieldiana: Zoology, vol. 34, no. 2, 5 pages, 2 illustrations

Crocodile Hunting in Central America, Popular Series, Zoology, no. 15, 23 pages, 10 illustrations

References to the Tuatara in the Stephen Island Letter Book, Fieldiana: Zoology, vol. 34, no. 1, 10 pages, 3 illustrations

The Surinam Coral Snake, Micrurus surinamensis, Fieldiana: Zoology, vol. 34, no. 4, 10 pages, 3 illustrations

TRAYLOR, MELVIN A., JR.

Notes on Birds from the Marcapata Valley, Cuzco, Peru, Fieldiana: Zoology, vol. 34, no. 3, 7 pages

ADMINISTRATIVE PUBLICATIONS

Report of the Director to the Board of Trustees for the Year 1951, 136 pages, 23 illustrations

CO-OPERATION WITH OTHER INSTITUTIONS

One of the many research undertakings in which the Museum has been co-operating with other scientific institutions is the Micronesian insect survey directed by the Pacific Science Board of the National Research Council under the sponsorship of the Office of Naval Research. Henry S. Dybas, Associate Curator of Insects, spent six months in the Palau and other Micronesian islands during 1947-48 in this connection and brought back collections totaling approximately forty thousand specimens. Earlier, during World War II, he had made valuable personal collections of insects of the Pacific islands, chiefly from the Marianas where he was stationed. Preliminary sorting of the Pacific Science Board collections as well as pinning and labeling of a considerable amount of the material was accomplished at this Museum.

These collections and collections made by other entomologists during and since the war, either independently or in co-operation with the Pacific Science Board, are to form the basis of a projected work, "Insects of Micronesia," to be published by Bernice P. Bishop Museum, Honolulu, under the sponsorship of the Pacific Science Board and with aid from the National Science Foundation. Individual families of insects will be studied by specialists throughout the world and each will write his respective contribution to the work, which, it is planned, will consist of two or more volumes. In April Dr. J. Linsley Gressitt, of the Pacific Science Board, spent several weeks at the Museum conferring with our staff and assisting in packing and distributing to the designated specialists the collections deposited here. Associate Curator Dybas spent the greater part of his time during the last half of the year in sorting the remainder of his wartime collections from the Mariana Islands so that this material can also be prepared and distributed to the co-operating contributors, a task, it is hoped, that will be completed by the end of 1953. Members of our staff and other specialists closely associated with our Division of Insects will write sections on their special groups of insects. Other similar co-operative projects of the Museum are mentioned in this Report under the headings of the scientific departments.

It is gratifying to report that the Colombia Zoological Expedition, which was in the field from 1948 until the fall of 1952 (see pages 31 and 51), was able to work with the Christian Brothers of the Museo de Historia Natural de La Salle, Bogotá, in their endeavor to restore the museum after its nearly complete destruction during the riots in Bogotá of April 9, 1948. Cordial relationships and close scien-

tific ties have always existed between that institution and our Department of Zoology, and the Museum is indebted to the late Brother Apolinar María and to Brother Nicéforo María, actual director of the museum, for the loan and gifts of many specimens needed in our zoological research. The Instituto de La Salle assigned Brother Antonio Miguel to our expedition for a month's field training in the Caquetá region. Later, Brother Roberto Mario, on a similar assignment, received field training in Muzo and in San Cristobal. Some time was spent in assisting the reorganization along modern lines of the Bogotá institution in its new quarters. On termination of field work the bulk of our expedition's equipment was left with the Christian Brothers for use in increasing their collection of scientific specimens.

Members of the scientific staff of the Museum continued to conduct classes at the Museum and to lecture at several universities. Advanced classes in archaeology and museology were held at the Museum for the University of Chicago by Dr. Paul S. Martin, Chief Curator of Anthropology, Donald Collier, Curator of South American Ethnology and Archaeology, and George I. Quimby, Curator of Exhibits. Dr. Alexander Spoehr, Curator of Oceanic Ethnology, gave a course in Oceanic ethnology at the University of Chicago, during which he brought his students to the Museum to study our collections. The advanced course in vertebrate paleontology of the University of Chicago was given as usual at the Museum by Professor Everett C. Olson, Research Associate in Fossil Vertebrates, with Dr. Robert H. Denison, Curator of Fossil Fishes, assisting. D. Dwight Davis, Curator of Vertebrate Anatomy, conducted a seminar at the University of Illinois. Dr. Theodor Just, Chief Curator of Botany, lectured at Yale University.

Among students who carried on graduate or special study at the Museum under supervision of members of the scientific staff were: Roger Grange, Jr., and Robert Skinner, with Chief Curator Martin and Dr. John B. Rinaldo, Assistant Curator of Archaeology; Phillip Lewis (Chicago Natural History Museum Fellow), with Curator Spoehr; Chester E. Hansen and John W. Thieret (Chicago Natural History Museum Fellow), with Chief Curator Just (preparation of theses); Glen Moore, with Dr. B. E. Dahlgren, Curator Emeritus of Botany; Lawrence Kaplan, with Dr. Hugh C. Cutler, Curator of Economic Botany; Abdul Hussain Al-Mahroosey (from the National Museum of Iraq, Baghdad), with Bryan Patterson, Curator of Fossil Mammals; Samuel B. Horowitz and Ralph Gordon Johnson, with Dr. Karl P. Schmidt, Chief Curator of Zoology; and William J. Beecher, with Curator Davis.



Art schools of Chicago hold regular sketching classes in the halls of the Museum.

Undergraduate students from nearby colleges and universities—mainly the University of Chicago, Chicago Teachers College, National College of Education, North Central College, Northwestern University, Roosevelt College, Valparaiso University, and Wheaton College—are coming in increasing numbers to the Museum for information. Some of the students are teachers-in-training who wish to know of the educational services offered by the Museum to teachers, and others are students working on special problems. Classes in botany from the University of Chicago, De Paul University, Northwestern University, Valparaiso University, and Wayne University visited the Museum's herbaria. Supervised classes from the School of the Art Institute of Chicago, Chicago Academy of Fine Arts, Academy of Applied Arts, and Institute of Design use the Museum exhibits as source-materials for sketches, models, and designs that often are outstanding in individuality. A special showing of work by students from the School of the Art Institute is

placed in Stanley Field Hall of the Museum for one month in the summer. Under the co-operative educational plan adopted in 1946 by the Museum and Antioch College, Yellow Springs, Ohio, fifteen young men and women were employed in 1952 by the Museum in its scientific departments and Library.

Scientists from other museums and from universities and colleges continued to use the research collections and laboratories of the Museum and to consult with members of its scientific staff. S. A. Cohagan, secretary of Grout Historical Museum, Waterloo, Iowa, consulted at length with members of the Department of Anthropology concerning plans for a museum program and a new museum building. Dr. David Baerreis, of the University of Wisconsin, spent several weeks at the Museum making color slides of Mexican antiquities for the series of slides on anthropological subjects that are distributed for teaching purposes to colleges and universities by the University of Wisconsin. E. D. Hester, research associate in the department of anthropology of the University of Chicago, continued his studies of Philippine ethnology at the Museum and gave great assistance to the Museum in matters pertaining to the Philippine Islands. Among others who examined the anthropological collections were Carl Schuster, New York; Dr. Kenneth Chapman, Laboratory of Anthropology, Santa Fe, New Mexico; Keith Dixon, University of California at Los Angeles; Miss Dorothy Menzel and Carlton Calkin, University of California; Dr. Jacques J. Clère, Paris (exchange professor at Brown University); and Miss Dorothy Leadbeater, New York.

Visiting botanists who consulted with the staff of the Department of Botany or used the Museum's botanical collections and laboratories include Dr. Louis O. Williams, Escuela Agrícola Panamericana, Tegucigalpa, Honduras; Dr. Glen S. Winteringer, Illinois State Museum; Dr. Bernice Templeton, Los Angeles County Museum; Dr. Duane Isely, Iowa State College; Dr. and Mrs. Leon Croizat, Merida, Venezuela; Paul Allen, United Fruit Company, Turrialba, Costa Rica; Dr. Fred Barkley, Yonkers, New York; Dr. Norman C. Fassett and Mason E. Hale, University of Wisconsin; Dr. and Mrs. Bryan S. Womersley, University of Adelaide, Australia; Dr. Chester S. Nielsen, Florida State University; Dr. Henry A. Imshaug, John L. Blum, K. H. McKnight, and Grady L. Webster, University of Michigan; John L. Wallace, Academy of Natural Sciences; Dr. A. B. Joly, University of São Paulo, Brazil; Dr. Dorothy E. Fensholt, Illinois State Normal University; Mr. and Mrs. William A. Daily, Butler University; and Dr. Edgar Anderson and E. D. Rudolph, Missouri Botanical Garden.

Scientists who studied the collections in the Department of Geology or used the paleontological laboratories include Professor D. M. S. Watson, University College, London (currently Agassiz Professor at Harvard University); Dr. Erik A. Stensiö, Stockholm Natural History Museum; Dr. Edward P. Henderson, United States National Museum; Dr. Llewellyn I. Price, Division of Geology and Mineralogy, Rio de Janeiro; Dr. M. R. Sahni, Geological Survey of India, Calcutta; Dr. Claude W. Hibbard, University of Michigan; Dr. Paul O. McGrew, University of Wyoming; and Dr. Charles A. Reed, University of Illinois.

Among the more extended studies carried on in the laboratories of the Department of Zoology, with the use of research collections and in association with the staff, are those of Dr. Walter C. Brown, Northwestern University, on lizards of the Pacific Islands; R. Gerard Albright, Stritch School of Medicine, Loyola University, on the mechanism of swallowing in snakes; Dr. Edward M. Nelson, Stritch School of Medicine, on the swim bladder of fishes; and Dr. E. L. Du Brul, College of Dentistry, University of Illinois, on consequences of erect posture in man and other animals.

Visiting zoologists who consulted with the staff or spent some time in examination of our collections include Robert Nero, Museum of the Department of Zoology, University of Wisconsin; William H. Phelps, Caracas, Venezuela; Bushir Alouse, National Museum of Iraq, Baghdad; Dr. Dillon S. Ripley, Jr., Peabody Museum of Natural History, Yale University; Dr. Robert W. Storer and Dr. Josselyn Van Tyne, Museum of Zoology, University of Michigan; Dwain W. Warner, Museum of Natural History, University of Minnesota; Dr. John T. Zimmer (formerly of the Museum staff) and Dr. W. S. Gertsch, American Museum of Natural History; Juan A. Rivero, University of Puerto Rico, Mayaguez; Richard Edgren, of G. D. Searle and Company; Norman Wilimovsky, Stanford University; Dr. P. N. Ehlers, Heidelberg, Germany; Dr. Orlando Park, Northwestern University; Dr. F. W. Newell, School of Medicine, Northwestern University; Dr. R. L. Roonwal, Department of Forest Research, India; A. A. Wood and R. E. Graves, Dominion Entomological Laboratory, Chatham, Ontario; Dr. M. W. Sanderson, Dr. Herbert H. Ross, and Harold Hanson, Illinois State Natural History Survey; Professor Melville Hatch, University of Washington; Cincinnato Gonçalves and R. L. Araujo, Instituto Biologico, São Paulo; Dr. J. L. Camin, Chicago Academy of Sciences; Dr. M. Muhsam, Hebrew University, Jerusalem; Dr. Sidney Camras, Chicago; Dr. Cornelius B. Philip, Rocky Mountain Laboratory; and Dr. E. W. Jameson, University of California.

ACTIVITIES OF STAFF MEMBERS IN SCIENTIFIC SOCIETIES

Dr. Alexander Spoehr, Curator of Oceanic Ethnology, attended the international symposium on anthropology held in New York by the Wenner-Gren Foundation for Anthropological Research, conferences in Washington, D.C., and Honolulu in connection with the National Research Council's program of anthropological research in the Pacific, and the meetings of the American Anthropological Association in Philadelphia. He continued as chairman of the National Research Council's subcommittee on Pacific archaeology and was appointed a consultant to the Pacific Science Board. Donald Collier, Curator of South American Ethnology and Archaeology, and Dr. John B. Rinaldo, Assistant Curator of Archaeology, attended the concurrent meetings in Columbus, Ohio, of the Central States Branch of the American Anthropological Association, of which Curator Collier was second vice-president, and the Society for American Archeology. Dr. Rinaldo and Miss Elaine Bluhm, Assistant in Archaeology, attended the Pecos Conference on Southwestern archaeology at the Laboratory of Anthropology in Santa Fe, New Mexico. George L. Quimby, Curator of Exhibits, was elected to membership in the Norwegian honorary anthropological (totemic) society at the University of Oslo. He attended a conference on North American archaeology in Cambridge, Massachusetts.

Dr. Theodor Just, Chief Curator of Botany, was one of two Americans who participated as guests of the French National Research Council in the symposium on evolution in plants held in Paris at Muséum National d'Histoire Naturelle. He attended several meetings in Washington, D.C., of the divisional committee of the Division of Biological Sciences of the National Science Foundation and, with Dr. Francis Drouet, Curator of the Cryptogamic Herbarium, Dr. Earl E. Sherff, Research Associate in Systematic Botany, and Dr. Julian A. Steyermark, Curator of the Phanerogamic Herbarium, attended the annual meetings of the American Institute of Biological Sciences at Cornell University, Ithaca, New York. Chief Curator Just was appointed chairman of the committee on synopsis of plant genera by the American Society of Plant Taxonomists and continued as chairman of the committee on paleobotany of the Division of Geology and Geography of the National Research Council and as secretary of the Society for the Study of Evolution. Curator Steyermark, who was invited to attend the Third General Assembly of the International Congress for the Protection of Nature held in Caracas, Venezuela, sent a paper, "The

Destructive Effect of Dams to Plant Life," to be read at the meeting. Dr. Hugh C. Cutler, Curator of Economic Botany, attended a meeting in Washington, D. C., of the National Research Council's committee on the preservation of indigenous strains of maize.

Dr. Sharat K. Roy, Chief Curator of Geology, attended the meetings in Boston of the Geological Society of America, and Dr. Robert H. Denison, Curator of Fossil Fishes, attended the concurrent meetings of the Society of Vertebrate Paleontology. Chief Curator Roy and Robert K. Wyant, Curator of Economic Geology, attended a conference at Yerkes Observatory, Williams Bay, Wisconsin, on the composition of meteorites.

In recognition of his years of research in fields of zoology, most notably in herpetology, the honorary degree of Doctor of Science was conferred on Karl P. Schmidt, Chief Curator of Zoology, by Earlham College, Richmond, Indiana, on the occasion of the dedication on October 25 of the David Worth Dennis Hall of Science and the Stout Memorial Meeting House. Chief Curator Schmidt gave the annual John Wesley Powell Lecture before a meeting of the Western Division of the American Association for the Advancement of Science at University of Colorado, Boulder. Dr. Austin L. Rand, Curator of Birds, attended the meetings of the American Ornithologists' Union at Baton Rouge, Louisiana. D. Dwight Davis, Curator of Vertebrate Anatomy, Robert F. Inger, Assistant Curator of Fishes, Clifford H. Pope, Curator of Amphibians and Reptiles, and Loren P. Woods, Curator of Fishes, attended the meetings of the American Society of Ichthyologists and Herpetologists at the University of Texas, Austin, where Curator Pope was chairman of the nominating committee, Curator Woods was elected a member of the board of governors, and Curator Davis was appointed chairman of the publication committee for *Checklist of North American Amphibians and Reptiles*. Chief Curator Schmidt was elected a fellow of California Academy of Sciences, Emmet R. Blake, Associate Curator of Birds, a fellow of the American Ornithologists' Union, and Rupert L. Wenzel, Curator of Insects, a fellow of the Entomological Society of America. Colin Campbell Sanborn, Curator of Mammals, was reappointed chairman of the committee on nomenclature of the American Society of Mammalogists.

Miss Miriam Wood, Chief of the James Nelson and Anna Louise Raymond Foundation, was one of seven participants from the United States in an international seminar held at the Brooklyn Museum of Arts and Sciences. The seminar, on the role of museums in education, was sponsored by UNESCO and attended by a total of forty representatives from twenty-five countries. Miss Wood

was chairman of the delegation representing the United States. Her contribution to the sessions, an outline of the educational work of Chicago Natural History Museum for both children and adults, will form part of a report to be made available to museums in member countries of the United Nations. Miss Nancy Worsham, of the staff of Raymond Foundation, attended the Fourteenth Midwest Wildlife Conference in Des Moines, Iowa. Mrs. Meta P. Howell, Librarian, attended the midwinter conference in Chicago of the American Library Association and, during the year, sessions of various professional library organizations.

Several members of the Museum staff serve on editorial boards of scientific journals. Curator Spoehr continued as review editor of the *American Anthropologist* (official journal of the American Anthropological Association) and was appointed editor, a position from which he later resigned. Chief Curator Just continued as editor of *Lloydia* (quarterly journal of biological science published by Lloyd Library and Museum, Cincinnati), as editor of *Paleobotanical Report* (published by the Division of Geology and Geography of the National Research Council), and as member of the editorial board of *American Journal of Botany* (official publication of the Botanical



A fossil trunk of an American cycadeoid on exhibition at the Paleobotaniska avdelningen, Naturhistoriska Riksmuseum, in Stockholm, is examined by our Chief Curator of Botany, Dr. Theodor Just, while on his recent visit to Europe to study the type collections in museums there. Photograph courtesy Svenska Dagbladet.

Society of America). Dr. Rainer Zangerl, Curator of Fossil Reptiles, continued as foreign-news editor and Mrs. Priscilla F. Turnbull, Assistant, as a regional editor of the *Society of Vertebrate Paleontology News Bulletin*. Chief Curator Schmidt continued as section editor (amphibians and reptiles) of *Biological Abstracts* (published under the auspices of the Union of American Biological Societies), consulting editor (cold-blooded vertebrates) of *American Midland Naturalist* (published by the University of Notre Dame), and member of the editorial board of *Ecology* (official publication of the Ecological Society of America).

Publications of members of the scientific staff during 1952 besides those issued by Chicago Natural History Museum include the following articles and reviews in various journals on subjects within the Museum's four fields of interest and research, anthropology, botany, geology, and zoology:

DEPARTMENT OF ANTHROPOLOGY

ALLEN, T. GEORGE

"Additions to the Egyptian Book of the Dead," *Journal of Near Eastern Studies*, vol. 11, pp. 177-186

"Critical Note on a King's Name," *Journal of Near Eastern Studies*, vol. 11, p. 112

COLLIER, DONALD

Review of *Handbook of Latin American Studies* (edited by Francisco Aguilera), in *American Anthropologist*, vol. 52, p. 270

Review of *Hoof Rattles and Girls' Puberty Rites in North and South America* (by H. E. Driver and S. H. Riesenbergl), in *American Anthropologist*, vol. 52, pp. 102-103

Review of *Radiocarbon Dating* (by W. F. Libby), in *American Anthropologist*, vol. 52, pp. 558-559

Review of *Swedish Archaeological Bibliography* (edited by Sverker Janson and Olof Vessberg), in *American Anthropologist*, vol. 52, p. 423

Review of *The Archaeology of the Santa Elena Peninsula in Southwest Ecuador* (by G. H. S. Bushnell), in *American Anthropologist*, vol. 54, pp. 252-254

MARTIN, PAUL S.

"With Pick and Shovel in Pine Lawn Valley," *Archaeology*, vol. 5, pp. 14-21

QUIMBY, GEORGE I.

"The Archeology of the Upper Great Lakes Area," in *Archeology of Eastern United States*, edited by James B. Griffin (University of Chicago Press), pp. 99-107

RINALDO, JOHN B.

"On Daifuku's New Conceptual Scheme for the Prehistoric Southwest," *American Anthropologist*, vol. 54, pp. 580-586

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

"Notas a la Flora de Colombia XII," *Revista de la Academia Colombiana de Ciencias*, vol. 8, pp. 464-488, 5 illustrations

DROUET, FRANCIS, AND WILLIAM A. DAILY

"A Synopsis of the Coccoid Myxophyceae," *Botanical Studies* (Butler University), vol. 10, pp. 220-223

JUST, THEODOR

"Fossil Floras of the Southern Hemisphere and Their Phytogeographical Significance," *Bulletin of the American Museum of Natural History*, vol. 99, art. 3, pp. 189-203

"Origine et Evolution de la Fleur," *Annales Biologiques*, tome 28, fasc. 5-6, pp. 135-143; also in *Colloques Internationaux du Centre National de la Recherche Scientifique*, vol. 41, *Evolution et Phylogénie chez les Végétaux* (Paris)

"The Paleobotanical Record of Zamia," *American Anthropologist*, vol. 54, no. 1, pp. 125-126

Review of *Entwicklungsgeschichte des Pflanzenreiches* (by Hans Heil), in *Quarterly Review of Biology*, vol. 27, no. 1, p. 79

Review of *Flora of the Cape Peninsula* (edited by R. S. Adamson and T. M. Salter), in *Quarterly Review of Biology*, vol. 27, no. 2, pp. 212-213

Review of *Fossil Taxodiaceae in Western North America* (by Ralph W. Chaney), in *Ecology*, vol. 33, no. 2, p. 313

Review of *Glossary of the British Flora* (by H. Gilbert-Carter), in *Quarterly Review of Biology*, vol. 27, no. 1, p. 87

Review of *Studies in Late Tertiary Paleobotany* (by Daniel I. Axelrod), in *Ecology*, vol. 33, no. 2, pp. 312-313

Review of *Taxonomy of Vascular Plants* (by George H. M. Lawrence), in *Science*, vol. 115, no. 2997, pp. 633-634

Review of *Weizen, Roggen, Gerste—Systematik, Geschichte und Verwendung* (by Elizabeth Schiemann), in *Quarterly Review of Biology*, vol. 27, no. 1, pp. 88-89

SHERFF, EARL E.

"Additions to Our Knowledge of the Genus *Tetraplasandra* A. Gray (fam. Araliaceae), in *Botanical Leaflets* (published by the author), no. 6, pp. 19-41

"A Pink-flowered Form of *Vicia villosa* Roth.," in *Botanical Leaflets* (published by the author), no. 7, p. 24

"Contributions to Our Knowledge of the Genera *Tetraplasandra* A. Gray and *Reynoldsia* A. Gray (fam. Araliaceae) in the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 7, pp. 7-17

"Further Notes on the Genus *Bidens* L. (fam. Compositae) in Tropical East Africa," in *Botanical Leaflets* (published by the author), no. 7, pp. 18-21

"Further Studies of Hawaiian Araliaceae: Additions to *Cheirodendron Helleri* Sherff and a Preliminary Treatment of the Endemic Species of *Reynoldsia* A. Gray," in *Botanical Leaflets* (published by the author), no. 6, pp. 6-19

"*Munroidendron*, a New Genus of Araliaceous Trees from the Island of Kauai," in *Botanical Leaflets* (published by the author), no. 7, pp. 21-24

"Notes on *Bidens* L. and *Coreopsis* L. (fam. Compositae) in the United States," in *Botanical Leaflets* (published by the author), no. 6, pp. 2-6

"Notes on *Schiedea* Cham. and *Schlecht.* (fam. Caryophyllaceae) and *Phyllostegia* Benth. (fam. Labiatae) in the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 7, pp. 6-7

"Some New or Otherwise Noteworthy Compositae from the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 7, pp. 2-6

STEYERMARK, JULIAN A.

- "A New *Carex* from Guatemala and Honduras," *Ceiba*, vol. 3, no. 1, pp. 23-24
- "An Example of How Dams Destroy Valuable Scientific Records," *Scientific Monthly*, vol. 44, no. 4, pp. 231-233
- "Color Forms of the Mayapple," *Rhodora*, vol. 54, no. 641, pp. 131-135
- "New Brazilian Species of *Utricularia*," *Bulletin of the Torrey Botanical Club*, vol. 79, no. 4, pp. 310-311
- "New Missouri Plant Records (1949-1951)," *Rhodora*, vol. 54, no. 646, pp. 250-260
- "New Pteridophyte Records from Missouri," *American Fern Journal*, vol. 42, no. 2, pp. 61-66 [with Ernest J. Palmer]
- "New Rubiaceae from Panama," *Ceiba*, vol. 3, no. 1, pp. 18-22
- "Plants New to Illinois and Chicago," *Rhodora*, vol. 54, no. 644, pp. 208-213 [with Floyd A. Swink]
- "Rare Missouri Plants—I. Yellow Fringed Orchis," *Missouri Botanical Garden Bulletin*, vol. 40, no. 2, pp. 33-48
- "Rare Missouri Plants—II. The Ozark Chestnut," *Missouri Botanical Garden Bulletin*, vol. 40, no. 5, pp. 77-80
- "Rare Missouri Plants—III. The Ozark Trillium," *Missouri Botanical Garden Bulletin*, vol. 40, no. 5, pp. 80-82
- "*Rousselia erratica*" in "Plantae Centrali-Americanae, III," *Ceiba*, vol. 3, no. 1, pp. 43-44
- "The Genus *Platycarpum* (Rubiaceae)," *American Journal of Botany*, vol. 39, no. 6, pp. 418-423

DEPARTMENT OF GEOLOGY

DENISON, ROBERT H.

- "Types and Figured Specimens of Fossil Fishes in the Patten Collection, Dartmouth College Museum, Hanover, New Hampshire," *American Midland Naturalist*, vol. 48, no. 1, pp. 161-164

DEPARTMENT OF ZOOLOGY

GREY, MARION

- "First Record of the Deepsea Fish *Dolichopteryx longipes* from the Pacific, with Notes on *Ophthalmopelton macropus*," *Copeia*, 1952, pp. 87-90, 1 illustration

HAAS, FRITZ

- "Shells Collected by the Peabody Museum Expedition to the Near East, 1950, I. Mollusks from the Persian Gulf," *Nautilus*, vol. 65, pp. 114-116

RAND, AUSTIN L.

- "Closely Associated Nests of Bronze Grackle and English Sparrow," *Wilson Bulletin*, vol. 64, pp. 105-106 [with R. M. Rand]
- "Mammal Bones from Dunes South of Lake Michigan," *American Midland Naturalist*, vol. 46, pp. 649-659 [with Stanley Rand]
- "Notes on Philippine Birds," *Natural History Miscellanea*, no. 107, pp. 1-5 [with D. S. Rabor]
- "Two New Birds from Philippine Islands," *Natural History Miscellanea*, no. 100, pp. 1-3 [with D. S. Rabor]

DEPARTMENT OF ZOOLOGY (*continued*)

SANBORN, COLIN CAMPBELL

"Mammals of the Rush Watkins Zoological Expedition to Siam," *Natural History Bulletin of the Siam Society*, vol. 15, pt. 1, pp. 1-20

"Rodents (Muridae) from Lunda District, Northeastern Angola," *Publicações Culturais da Companhia de Diamantes de Angola, Separata* no. 14, pp. 107-120, 1 map

"The Status of *Triacynops wheeleri* Osgood," *Natural History Miscellanea*, no. 97, pp. 1-3

SCHMIDT, KARL P.

"Diagnoses of New Amphibians and Reptiles from Iran," *Natural History Miscellanea*, no. 93, pp. 1-2

"The Function of a University Museum," *Museum News*, May 15, 1952, pp. 5-8

WOODS, LOREN P.

"Fishes Attracted to Surface Light at Night in the Gulf of Mexico," *Copeia*, 1952, pp. 40-41

CAFETERIA

The cafeteria and lunchroom served 321,248 persons during the year, an increase of about 12,000 over last year. Dining facilities are maintained in the Museum not as a money-making enterprise but as a service to its staff and visitors because the Museum is at a considerable distance from commercial restaurants. Nevertheless the gross income of \$131,654.92 included a small margin of profit, which was less than one per cent of the Museum budget.

THE BOOK SHOP

Again the Book Shop established new records of efficiency and service with gross sales of \$68,998.85, an increase of almost \$13,000 over 1951 sales. The volume of sales by mail was given considerable impetus as the result of a brief article in *Good Housekeeping* magazine drawing the attention of readers and parents throughout the United States and Canada to our "Museum Stories" for children that sell for one cent each. Since last August, when the article was printed, more than 225,000 of the stories have been sold, almost entirely by mail. These stories are sold at cost, and it is a matter of concern that the rising prices of paper, ink, and skilled labor may push publication costs beyond the sale price. Souvenirs and novelties are still the principal item accounting for volume of sales and profit, but the Book Shop continues to sell a substantial number of authoritative books on natural history and anthropology.

MAINTENANCE, CONSTRUCTION, AND ENGINEERING

Perhaps no one at the Museum has a better general idea of its many types of activity than the Superintendent of Maintenance and the Chief Engineer. The work of their Divisions puts them in contact with everything that happens and, in most cases, brings them into the planning activities and events of the future. No exhibit can be installed without adequate cases being provided or without adequate provision for proper lighting. Museum operation requires teamwork, and perhaps it is nowhere better exemplified than in the fine co-operation of the Divisions of Maintenance and Engineering with the scientific and preparation staffs.

During the year, exhibition cases including new tops to provide for case-lighting were completely rebuilt for Hall 6 (Plains Indians) in the Department of Anthropology. Twelve cases were reinstalled and two new cases prepared for the Department of Geology, and cases were provided for the new exhibit of perching songbirds in Boardman Conover Hall (Hall 21) and a new exhibit on muscles in the Hall of Vertebrate Anatomy (Hall 19). In addition, improvements were made in the cases containing Bushman the gorilla, the sable antelope, the bongo group, and the water-buffalo group. The periodic filling of poison containers in all cases that contain materials subject to insect damage was carried out as usual. Three additional cases in Ernest R. Graham Hall (Hall 38, Fossil Vertebrates) were wired for case lighting as well as one case each in Hall 21 and Carl E. Akeley Memorial Hall (Hall 22, African Mammals). Necessary lighting and other preparational work were completed in the cases for the new habitat groups of northern sea otter and Malay tapir.

In order to facilitate the housing and study of our great research collections many changes and improvements were necessary. Sixty additional trays were provided for the textile collection, sixty trays also were provided for fossil plants, and provision was made for the care of the rapidly expanding libraries in the Departments of Botany and Geology. Additional storage facilities were provided for the Book Shop in order that it might keep pace efficiently with its ever-expanding activities. The rearrangement of the Division of Insects, which was largely accomplished during the preceding year, was completed, and work continued on the new area allotted to the Division of Anatomy. A major move requiring complete construction, including walls, steel shelving, water and drain connections, sinks and lighting, brought the Division of Reptiles from the third and fourth floors to the ground floor in an area adjacent to the Division of Fishes. This move was necessary because of the

increasing load of specimens in preservative solution stored in glass jars. Concrete tanks were also constructed on the ground floor for storage of large specimens required by the Division of Anatomy, and a room for the cleaning of skeletal material by dermestids was also constructed. Steel shelving was erected in the storeroom of the Purchasing Agent, and not to be overlooked in the care of material in storage was the erection of a new bank of steel shelves in the Maintenance storeroom.

Miscellaneous items accomplished by the Divisions of Engineering and Maintenance for the operation of the Museum included the necessary moving of exhibition cases to and from Stanley Field Hall in connection with the many temporary exhibits annually displayed; the preparation of shipping boxes required by the scientific departments in connection with expeditionary work and also required by the Division of Publications to send our published scientific treatises to the Smithsonian Institution in Washington, D.C., for world-wide distribution through its international exchange service; and the periodic moving of certain exhibition cases to provide space for the large crowds that attend the Sunday lectures given by Paul G. Dallwig, Layman Lecturer. New book-carriers were made to order for the Library, and a rolling screen was constructed to close the adjacent corridor when the Museum cafeteria is not in operation.

The problem of replacing deteriorating window sash was continued during the summer months when outdoor work was feasible. Safety bolts were installed in the walls of the building at the third-floor level to provide safe operating conditions for the window washers. The outdoor signs giving information about the Museum were relettered and repainted. Tuckpointing continued through the summer months on the west terrace wall, smoke stack, east areaway, and the terrace wall adjacent to the south steps. Protective measures against termites were taken in additional areas that appeared to be endangered. New upholstery was provided for 125 theatre seats and one hundred theatre chairs after more than thirty years of use. The usual cleaning operations, accompanied by painting where necessary, were carried out. An assignment requiring great skill and care was the cleaning in Hall 25 (Food Plants) of the murals painted by Julius Moessel.

In the boiler room, the boiler breeching, dust collectors, and ash vent-pipe were cleaned during the summer and prepared for the winter heating-season. The old coal conveyor, which was installed when the Museum was built, had finally deteriorated, in spite of proper maintenance, to the point where it had to be discarded, and a new Link Belt bulk flow conveyor was installed in its place. All



A lively summer play-group pays a visit to the Brazilian water-birds in Hall 20.

pumps were overhauled and painted, and the exposed steel-work under the coal hoppers was also given a protective coating. The smoke stack required extensive repairs. The lining was torn out and the stack was cleaned, repaired, and coated with rust-resisting paint. Two and one-half inches of insulation material and a half-inch coating of waterproof mastic cement were then installed. Since our boilers are used for heating only, the stack is at the mercy of the weather during the summer nonheating season. Steam traps were removed, repaired, and replaced where necessary, and forty-eight new traps were installed. Routine repairs and replacements were made as required throughout the plumbing system.

Repairs, replacements, and rejuvenation of the electrical system were continued through the year. Old lighting panels that have open switches are being discarded in favor of dead-front panels, and circuit breakers are being installed to eliminate the use of fuses. Circuits are being rearranged in order better to distribute the load balance of the various electrical circuits throughout the Museum. This has become necessary because halls and areas are now being used in a manner not contemplated when the original circuits were installed. Stack lights in the Library cataloguing room were replaced with larger units, and twenty-four Dazor work-lights were installed in offices and workrooms. The James Simpson Theatre was entirely relamped, and the public-address system was repaired and improved through relocation of the speaker units. Maintenance of electrical motors in workrooms and shops continued throughout the year. Under existing contracts with Shedd Aquarium and the Chicago Park District, the Museum furnished and sold 32,303,761 pounds of steam. It may be recalled that the Museum undertook the task of furnishing heat to these neighboring establishments to reduce the number of smoke stacks on the lakefront in order to help keep our city clean.

Throughout the years the Divisions of Maintenance and Engineering have been continually studying new methods and new materials that may be used advantageously by the Museum. Currently, tests are in progress on enameled panels for use in closing spaces where windows were installed years ago but are not required under present conditions. Such experimentation has resulted in many instances in providing better maintenance, better working conditions, and lower costs. Under present conditions, such a policy is more than ever necessary.

MISCELLANEOUS

In the pages that follow are submitted the Museum's financial statements, attendance statistics, door receipts, accessions, list of Members, articles of incorporation, and amended by-laws.

CLIFFORD C. GREGG, *Director*
Chicago Natural History Museum

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES CURRENT FUNDS

FOR YEARS 1952 AND 1951

Operating Fund

INCOME	1952	1951
From investments of		
General endowment funds	\$ 727,084.69	\$ 689,554.11
Life and associate membership funds	26,751.69	27,335.22
	<u>\$ 753,836.38</u>	<u>\$ 716,889.33</u>
Chicago Park District	128,478.39	128,620.29
Annual and sustaining memberships	20,885.00	20,305.00
Admissions	33,692.50	33,335.00
Sundry receipts, including general purpose contributions	38,304.61	34,736.16
Restricted funds transferred to apply against Operating Fund expenditures (contra)	<u>83,136.20</u>	<u>106,812.52</u>
	<u>\$1,058,333.08</u>	<u>\$1,040,698.30</u>
EXPENDITURES		
Collections		
Purchases and expedition costs	\$ 68,708.09	\$ 77,777.27
Museum operating expenses capitalized	63,462.14	61,916.51
	<u>\$ 132,170.23</u>	<u>\$ 139,693.78</u>
Furniture, fixtures, and equipment	14,399.77	57,083.42
Pensions and employee benefits	52,871.33	59,515.06
Departmental operating expenses	114,859.36	101,587.66
General operating expenses	598,110.00	537,143.12
Building repairs and alterations	118,674.02	108,066.22
Premiums on assigned life insurance and appropriations in lieu thereof	14,500.00	14,557.40
Provision for contingencies (contra)		10,000.00
Provision for mechanical plant depreciation (contra)	10,000.00	10,000.00
Appropriated to cover operating deficit of The N. W. Harris Public School Extension (contra)	<u>2,206.37</u>	<u>421.27</u>
	<u>\$1,057,791.08</u>	<u>\$1,038,067.93</u>
EXCESS OF INCOME OVER EXPENDITURES	<u>\$ 542.00</u>	<u>\$ 2,630.37</u>

CONTINUED ON NEXT PAGE

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES—CURRENT FUNDS

FOR YEARS 1952 AND 1951 (CONTINUED)

The N. W. Harris Public School

Extension	1952	1951
Income from endowments.....	\$ 20,638.30	\$ 20,208.02
Expenditures.....	<u>22,844.67</u>	<u>20,629.29</u>
DEFICIT TRANSFERRED TO OPERATING FUND (CONTRA).....	<u>\$ 2,206.37</u>	<u>\$ 421.27</u>

Other Restricted Funds

INCOME

From Specific Endowment Fund investments	\$ 50,959.15	\$ 49,005.36
Contributions for specified purposes.....	42,428.01	36,850.65
Operating Fund appropriations for mechanical plant depreciation and contingencies (contra).....	10,000.00	20,000.00
Sundry receipts—net.....	<u>30,305.80</u>	<u>25,803.33</u>
	<u>\$ 133,692.96</u>	<u>\$ 131,659.34</u>

EXPENDITURES

Transferred to Operating Fund to apply against expenditures (contra).....	\$ 83,136.20	\$ 106,812.52
Added to Endowment Fund principal.....	<u>24,000.00</u>	<u>25,000.00</u>
	<u>\$ 107,136.20</u>	<u>\$ 131,812.52</u>
EXCESS (DEFICIENCY) OF INCOME OVER EX- PENDITURES.....	<u>\$ 26,556.76</u>	<u>\$ (153.18)</u>

TO THE TRUSTEES
CHICAGO NATURAL HISTORY MUSEUM
CHICAGO, ILLINOIS

In our opinion the accompanying statement presents fairly the income and expenditures of the current funds of Chicago Natural History Museum for the years 1951 and 1952, in conformity with generally accepted accounting principles consistently applied during the periods. Our examination of the statement was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

ARTHUR YOUNG AND COMPANY

Chicago, Illinois
January 29, 1953

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1952 AND 1951

	1952		1951
Total attendance.....	1,305,556		1,251,752
Paid attendance.....	134,770		133,340
Free admissions on pay days			
Students.....	32,226		32,771
School children.....	93,861		87,590
Teachers.....	4,988		4,387
Members.....	640		492
Service men and women.....	2,532		3,128
Special meetings and occasions.....	2,953		3,377
Admissions on free days			
Thursdays (51).....	137,444	(52)	172,376
Saturdays (52).....	315,129	(52)	316,178
Sundays (52).....	581,012	(52)	498,210
Highest attendance on any day			
(November 9).....	16,488	(September 2)	16,266
Lowest attendance on any day			
(March 4).....	159	(December 21)	61
Highest paid attendance (September 1) ..	3,600	(September 3)	4,244
Average daily admissions (364 days).....	3,586	(363 days)	3,448
Average paid admissions (209 days).....	645	(207 days)	644
<hr/>			
Copies of <i>General Guide</i> sold.....	27,026		25,410
Number of articles checked.....	45,805		43,321
Number of picture post-cards sold.....	283,394		228,192
Sales of Museum publications (both scientific and popular) and photographs; rental of wheel chairs.....	\$13,034.69		\$10,865.19

Contributions and Bequests

Contributions and bequests to Chicago Natural History Museum may be made in securities, money, books, or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Chicago Natural History Museum of the City of Chicago, State of Illinois:

Cash contributions made within the taxable year to Chicago Natural History Museum to an amount not in excess of 20 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax

ACCESSIONS, 1952

DEPARTMENT OF ANTHROPOLOGY—ACCESSIONS

BARNHART, GRACIA M. F., Hinsdale, Illinois: model of Haida totem pole—probably Queen Charlotte Islands, British Columbia (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Paul S. Martin (Southwest Archaeological Expedition, 1952): about 1,000 specimens, including stone, bone, clay, pottery, leather, wood, cordage, woven, and miscellaneous perishable artifacts—Y Canyon Cave, Cosper Cliff Dwelling, Hinkle Park Cliff Dwelling, O Block Cave, and Sawmill Site, near Reserve, New Mexico

Collected by Dr. Alexander Spoehr (Micronesia Anthropological Expedition, 1949–50): skeletal material—Saiipan and Tinian, Micronesia

Purchases: 2 pottery archaeological vessels in Decadent Tiahuanaco style—Cochabamba, Bolivia; 8 ethnological specimens—Easter Islands; 1 feather mantle, Inca period—Peru

CHILDS, C. F., Lake Forest, Illinois: 2 Tibetan temple lamps—Darjiling, India (gift)

GEISLER, MRS. F. W., Chicago: ethnological material—Sumatra (gift)

HARVEY, BYRON, III, Chicago: 180 Hopi kachina dolls, 23 baskets, 15 miscellaneous ceremonial objects—Hopi villages, Arizona (gift)

KNAPP, W. T., Chicago: 9 pieces of modern Pueblo pottery, 1 string bell-jingles—Rio Grande Pueblos, New Mexico (gift)

LANGSNER, ALBERT C., Chicago: 6 pairs of beaded moccasins, 2 girl's dresses, 1 beaded saddle-blanket, 4 beaded bags, 1 pair of beaded cuffs, 1 beaded tie, 1 string of beads, 1 doll, 1 knife case, 1 pair of beaded suspenders—Northern Plains (gift)

REED, DR. ERIK K., Santa Fe, New Mexico: 3 prehistoric adzes and pottery—Rota, Mariana Islands (gift)

TRIER, ROBERT, Chicago: 3 archaeological and 5 ethnological specimens—Marquesas, Samoa, and Tonga (gift)

WENNER-GREN FOUNDATION FOR ANTHROPOLOGICAL RESEARCH, New York: mandible fragment (cast) and pelvic fragment (cast) of *Australopithecus prometheus*—Makapansgat, Central Transvaal, Africa (gift)

DEPARTMENT OF BOTANY—ACCESSIONS

ALLEN, DR. MARY BELLE, Pacific Grove, California: 25 algae (gift)

ANGULO, NICOLAS, Trujillo, Peru: 18 algae (gift)

AUCKLAND UNIVERSITY COLLEGE, Auckland, New Zealand: 140 cryptogamic specimens (exchange)

BAILEY HORTORIUM, Ithaca, New York: 1 plant specimen (gift)

BARKLEY, DR. FRED A., Yonkers, New York: 211 algae, 145 plant specimens (gift)

BARTEL, KARL E., Blue Island, Illinois: 1 plant specimen (gift)

BAUER, BILL, Imperial, Missouri: 1 plant specimen (gift)

BISHOP MUSEUM, BERNICE P., Honolulu, Hawaii: 32 plant specimens (gift)

BOELCKE, OSVALDO, Buenos Aires, Argentina: 153 plant specimens (exchange)

BOLD, DR. HAROLD C., Nashville: 4 algae (gift)

BOTANISCHE STAATSSAMMLUNG, Munich, Germany: 151 cryptogams (exchange)

BOTANISKA MUSEET, Uppsala, Sweden: 417 plant specimens (exchange)

BOTANISK MUSEUM, Copenhagen, Denmark: 186 cryptogams (exchange)

BRAUN, DR. E. LUCY, Cincinnati: 315 plant specimens (gift)

BRITISH MUSEUM (NATURAL HISTORY), London: 86 plant specimens (exchange)

CALIFORNIA, UNIVERSITY OF, Berkeley: 373 cryptogamic specimens (exchange)

CARDENAS, DR. MARTIN, Cochabamba, Bolivia: 61 plant specimens (gift)

CHASE, DR. VIRGINIUS H., Peoria Heights, Illinois: 32 cryptogamic specimens (gift)

CHICAGO, UNIVERSITY OF, Chicago: 122 plant specimens (Herbarium of Professor Adolph C. Noé) (gift)

CHICAGO NATURAL HISTORY MUSEUM: Collected by Dr. Norman C. Fassett (Salvadorian Project, 1950-51): 218 plant specimens

Purchases: 1,339 plant specimens—Bolivia; 75 cryptogamic specimens—Chile; 147 plant specimens—Colombia; 395 plant specimens—Mexico; 80 plant specimens—South Africa

CLEVELAND, MARGARET, Chicago: 1 plant specimen (gift)

COE, DR. D. M., Palmer, Alaska: 1 cryptogamic specimen (gift)

CONNERS, DR. J. J., Oakland, California: 2 cryptogamic specimens (gift)

CONSERVATOR OF FORESTS, Belize, British Honduras: 2 plant specimens (gift)

CORRELL, DR. DONOVAN STEWART, Beltsville, Maryland: 391 cryptogamic specimens (gift)

CRIBB, DR. A. B., Cronulla, New South Wales, Australia: 2 cryptogamic specimens (exchange)

CUATRECASAS, DR. JOSÉ, Chicago: 4 cryptogamic specimens (gift)

CUTLER, DR. HUGH C., Lombard, Illinois: 171 plant specimens (gift)

DAHL, MRS. EMIL, Hartford, Michigan: 1 plant specimen (gift)

DAHLGREN, DR. B. E., Chicago: 7 plant specimens (gift)

DAILY, WILLIAM A., Indianapolis: 157 cryptogamic specimens (gift)

DAWSON, DR. E. YALE, Los Angeles: 67 cryptogamic specimens (gift)

DE TONI, DR. ANNA, Brescia, Italy: 111 cryptogamic specimens (gift)

DILLER, DR. VIOLET M., Cincinnati: 24 cryptogamic specimens (gift)

DOTY, DR. MAXWELL S., Honolulu, Hawaii: 429 cryptogamic specimens (gift)

DUKE UNIVERSITY, Durham, North Carolina: 300 plant specimens (exchange); 25 plant specimens (gift)

ESCUELA AGRÍCOLA PANAMERICANA, Tegucigalpa, Honduras: 1,668 plant specimens (exchange); 2 plant specimens (gift)

EVANS, DR. RICHARD I., Madison, Wisconsin: 5 cryptogamic specimens (gift)

FIELD, DR. HENRY, Washington, D.C.: 62 cryptogamic specimens, 52 plant specimens (gift)

FISHER, GEORGE L., Houston, Texas: 4 cryptogamic specimens (gift)

FLINT, DR. L. H., Baton Rouge, Louisiana: 7 cryptogamic specimens (exchange)

FUNDACION MIGUEL LILLO, Tucuman, Argentina: 20 plant specimens (exchange)

GARDNER, SHELDON T., Chicago: 1 plant specimen (gift)

GIER, DR. L. J., Liberty, Missouri: 41 plant specimens (gift)

GINSBURG, DR. R. N., Coral Gables, Florida: 11 cryptogamic specimens (gift)

GRAY HERBARIUM, Cambridge, Massachusetts: 100 cryptogamic specimens, 192 plant specimens (exchange)

GROW, RAYMOND, Gary, Indiana: 1 plant specimen (gift)

GYMNASIUM SEATING COUNCIL, Chicago: 1 plant specimen (gift)

HABEEB, DR. HERBERT, Grand Falls, New Brunswick, Canada: 190 cryptogamic specimens (exchange)

HALE, MASON E., JR., Madison, Wisconsin: 60 cryptogamic specimens (gift)

HARRISON, B. F., Provo, Utah: 11 plant specimens (gift)

HAXO, DR. FRANCIS T., Baltimore: 1 cryptogamic specimen (gift)

HERMANN, DR. F. J., Beltsville, Maryland: 1 cryptogamic specimen (gift)

HOLLENBERG, DR. GEORGE J., Redlands, California: 1 cryptogamic specimen (gift)

HUMM, DR. HAROLD J., Tallahassee, Florida: 6 algae (gift)

ILLINOIS, UNIVERSITY OF, Urbana: 1 plant specimen (gift)

ILLINOIS STATE MUSEUM, Springfield: 2 plant specimens (gift)

INSTITUTE OF JAMAICA, Kingston: 20 algae (gift)

INSTITUTO DE CIENCIAS NATURALES, Bogotá, Colombia: 82 plant specimens (exchange)

IOWA, STATE UNIVERSITY OF, Iowa City: 825 plant specimens (gift)

IOWA STATE COLLEGE, Ames: 78 plant specimens (exchange); 261 plant specimens (gift)

JARDIN BOTANIQUE DE L'ETAT, Brussels, Belgium: 412 plant specimens (exchange)

JOLY, DR. A. B., São Paulo, Brazil: 8 algae (gift)

JONES, MRS. EDITH, West Palm Beach, Florida: 4 algae (gift)

KENDALL, MRS. BURNS, Elburn, Illinois: 1 plant specimen (gift)

KILLIP, DR. E. P., Big Pine Key, Florida: 171 algae, 173 plant specimens (gift)

KOSTER, DR. JOSEPHINE T., Leiden, Netherlands: 3 cryptogamic specimens (gift)

KRAPOVICKAS, ANTONIO, Manfredi (Córdoba), Argentina: 6 plant specimens (exchange)

KRUKOFF, DR. B. A., Chicacao, Guatemala: 5 plant specimens (gift)

LAMB, GEORGE H., Mahogany Association, Incorporated, Chicago: 5 wood specimens (gift)

LA RIVERS, DR. IRA, Reno, Nevada: 59 algae (gift)

LASKER, DR. REUBEN, Coral Gables, Florida: 1 cryptogamic specimen (gift)

LAUGHLIN, KENDALL, Chicago: 2 plant specimens (gift)

LEMON, LOLA, Gary, Indiana: 1 plant specimen (gift)

LEWIN, DR. R. A., Halifax, Nova Scotia: 9 algae (gift)

LOVE, DR. ASKELL, Winnipeg, Manitoba, Canada: 1 cryptogamic specimen (gift)

LUNDBERG, GODFREY, Chicago: 1 cryptogamic specimen (gift)

MABILLE, JEAN, Berthenicourt-par-Moy, France: 17 algae (gift)

MACBRIDE, J. FRANCIS, Stanford University, California: 732 algae (gift)

MACOTELA, ESTEBAN, Mexico City, Mexico: 1 plant specimen (gift)

MADSEN, DR. GRACE C., Tallahassee, Florida: 72 algae (gift)

MALDONADO, DR. ANGEL, Lima, Peru: 6 algae (gift)

MATUDA, EIZI, Chapultepec, Mexico: 5 plant specimens (gift)

MAY, DR. VALERIE, Sydney Australia: 29 algae (gift)

MCCASKILL, PROFESSOR L. W., Christchurch, New Zealand: 1 plant specimen (gift)

MEYER, FRED G., St. Louis: 1 economic specimen (gift)

MICHIGAN, UNIVERSITY OF, Ann Arbor: 631 cryptogamic specimens, 53 plant specimens (exchange)

MILLE, PADRE LUIS, Manabí, Ecuador: 1 plant specimen (gift)

MISSOURI BOTANICAL GARDEN, St. Louis: 35 algae, 6 plant specimens (gift)

MORRISON, WARREN F., Chicago: 3 algae (gift)

MOSCHL, DR. WILHELM, Erzherzog, Austria: 15 plant specimens (exchange)

MUSEO ARGENTINO DE CIENCIAS NATURALES, Buenos Aires: 53 plant specimens (exchange)

MUSEO DE HISTORIA NATURAL, Lima, Peru: 102 plant specimens (exchange)

MUSEUM NATIONAL D'HISTOIRE NATURELLE, Paris: 247 cryptogamic specimens (exchange)

NATIONAL SCIENCE MUSEUM, Tokyo: 198 plant specimens (exchange)

NATURHISTORISCHES MUSEUM, Vienna: 696 cryptogamic specimens (exchange); 1,140 cryptogamic specimens (gift)

NEW YORK, STATE UNIVERSITY OF, COLLEGE OF FORESTRY, Syracuse: 691 wood specimens (exchange)

NEW YORK BOTANICAL GARDEN, New York: 669 plant specimens, 121 type photographs (exchange); 34 algae, 2 plant specimens, 2 photographs (gift)

NIELSEN, DR. CHESTER S., Tallahassee, Florida: 115 cryptogamic specimens (gift)

NORVELL, OLIVER, Stanford University, California: 13 plant specimens (gift)

PALMER, DR. C. M., Cincinnati: 37 algae (gift)

PALMER, E. J., Webb City, Missouri: 873 plant specimens (gift)

PAPENFUSS, DR. GEORGE F., Berkeley, California: 1 cryptogamic specimen (gift)

PATINO, VICTOR MANUEL, Cali, Colombia: 16 plant specimens (gift)

PHILIPPINES, UNIVERSITY OF THE, Quezon City, Philippine Islands: 265 cryptogamic specimens (exchange)

PRINGLE, H. A., Chicago: 1 plant specimen (gift)

PROCTOR, V. W., Columbia, Missouri: 1 cryptogamic specimen (gift)

RICHARDS FUND, DONALD: 12,228 lichens—Arizona, Colorado, and New Mexico; 1,286 cryptogams—Brazil, Florida, India, and Virginia; 1,000 algae—France and the French Antilles; 300 cryptogams—Gaspé Peninsula and New Jersey; 470 cryptogams—Japan; 53 mosses—New Zealand; 1,810 cryptogams—Sweden; 413 cryptogams—Wisconsin

RIJKSHERBARIUM, Leiden, Netherlands: 160 cryptogamic specimens (exchange)

RODEMAN, MRS. MARY C., Jefferson City, Missouri: 1 plant specimen (gift)

ROELOFS, HENRY, East Chicago, Indiana: 1 cryptogamic specimen (gift)

ROSS, LILLIAN A., Chicago: 10 lichens (gift)

ROUSSEAU, DR. JACQUES, Montreal, Quebec, Canada: 31 algae (gift)

ROYAL BOTANIC GARDENS, Kew, England: 2 photographs (exchange)

RUTGERS UNIVERSITY, New Brunswick, New Jersey: 48 cryptogamic specimens (exchange)

SANTA BARBARA BOTANIC GARDEN, Santa Barbara, California: 70 plant specimens (gift)

SCHALLERT, DR. P. O., Altamonte Springs, Florida: 155 cryptogamic specimens (gift)

SCHUGMAN, MRS. EFFIE M., Chicago: 1 cryptogamic specimen (gift)

SCHULTES, DR. RICHARD E., Cambridge, Massachusetts: 6 plant specimens (gift)

SCHWERTFEGER, DR. FRITZ, Guatemala City, Guatemala: 2 plant specimens (gift)

SELLA, EMIL, Chicago: 2 cryptogamic specimens (gift)

SHERFF, DR. EARL E., Chicago: 125 plant specimens, 71 prints and negatives (gift)

SILVA, DR. HERMAN, Knoxville, Tennessee: 2 algae (gift)

SOUKUP, DR. J., Lima, Peru: 67 plant specimens (gift)

SOUTHERN ILLINOIS NORMAL UNIVERSITY, Carbondale: 1 plant specimen, 2 microscope slides of wood sections (gift)

SOUTHERN METHODIST UNIVERSITY, Dallas: 185 cryptogamic specimens (exchange)

STARR, DR. RICHARD C., Bloomington, Indiana: 1 cryptogamic specimen (gift)

STEYERMARK, DR. JULIAN A., Barrington, Illinois: 11,208 plant specimens (gift)

STIFLER, MRS. CLOYD B., Bradenton, Florida: 1 cryptogamic specimen (gift)

SWINK, FLOYD A., Cicero, Illinois: 718 plant specimens (gift)

THIERET, JOHN W., Chicago: 1 plant specimen (gift)

TROXEL, DAVID, Barrington, Illinois: 35 plant specimens (gift)

UNITED STATES DEPARTMENT OF AGRICULTURE, Washington, D.C.: 1 plant specimen (exchange)

UNITED STATES DEPARTMENT OF AGRICULTURE, PLANT INDUSTRY STATION, Beltsville, Maryland: 41 plant specimens (exchange); 18 plant specimens (gift)

UNITED STATES NATIONAL ARBORETUM, Washington, D.C.: 5 plant specimens (gift)

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 455 cryptogamic specimens, 175 plant specimens (exchange); 3 cryptogamic specimens, 12 plant specimens (gift)

VAN TRESS, ROBERT, Chicago: 1 plant specimen (gift)

VARGAS, DR. CESAR, Cuzco, Peru: 16 algae (gift)

VOTH, DR. PAUL D., Chicago: 2 cryptogamic specimens (gift)

WASHINGTON, UNIVERSITY OF, Seattle: 18 plant specimens (exchange)

WHITEHOUSE, DR. EULA, Dallas: 1 alga (gift)

WILSON, ARCHIE F., Flossmoor, Illinois: 53 plant specimens (gift); 159 wood specimens (exchange)

WISCONSIN, UNIVERSITY OF, Madison: 108 plant specimens (exchange)

WITMER, PROFESSOR S. W., Goshen, Indiana: 1 plant specimen (gift)

WOMERSLEY, DR. H. B. S., Adelaide, Australia: 8 algae (gift)

WOOD, DR. RICHARD D., Kingston, Rhode Island: 3 algae (gift)

WYATT, ALEX K., Chicago: 1 plant specimen (gift)

YALE UNIVERSITY, SCHOOL OF FORESTRY, New Haven, Connecticut: 57 plant specimens (gift)

ZICKMAN, MRS. ROBERT, Villa Park, Illinois: 2 plant specimens (gift)

DEPARTMENT OF GEOLOGY—ACCESSIONS

ALEXANDER, JOHN H., Colorado Springs, Colorado: 3 crystals (topaz, microline, quartz)—Pikes Peak (gift)

AMERICAN MUSEUM OF NATURAL HISTORY, New York: cast of *Cotylo-rhynchus* skull (exchange)

BECK, JOSEPH N., Ramsen, Iowa: 1 hair-ball—Iowa (gift)

BECKER, AUGUST G. (deceased), presented by RAYMOND B. BECKER, Gainesville, Florida: cranium of muskox—Iowa; 3 goedes, 2 marcasite concretions—various localities (gift)

BOOKWALTER, R., Chicago: 2 pieces of fossil tree-trunk—locality unknown (gift)

CALIFORNIA, UNIVERSITY OF, MUSEUM OF PALEONTOLOGY, Berkeley: 213 fossil invertebrates (Tertiary and Pleistocene)—West Coast (exchange)

CANTERBURY MUSEUM, Christchurch, New Zealand: 2 skeletons of fossil moas, *Emeus* and *Dinornis*—New Zealand (exchange)

CHICAGO, UNIVERSITY OF, Chicago: 32 fossil reptiles—Archer and Knox counties, Texas (gift)

CHICAGO NATURAL HISTORY MUSEUM: Collected by Dr. Robert H. Denison (Canadian Maritime Provinces Paleontological Field Trip, 1952): collection of primitive fishes—various localities

Collected by Orville L. Gilpin and William D. Turnbull (Texas Paleontological Expedition, 1952): collection of microfauna and a large turtle—Texas

Collected by George Langford and Eugene S. Richardson, Jr. (Wilmington, Illinois, Paleontological Field Trips, 1952): 1,000 fossil-plant specimens, 20 fossil invertebrates—Illinois

Collected by Dr. Sharat K. Roy (Eastern States Geological Field Trip, 1950): 43 lithological specimens—various localities

FARR, WILLARD H., Chicago: 13 Mississippian crinoids—Alabama (gift)

JARRA GEM CORPORATION, New York: Jarra synthetic rutile gem (10 carats) cut from a boule (gift)

JENSEN, ANNA C., Western Springs, Illinois: collection of fossilized wood, fossil corals, minerals—various localities (gift)

KENYA GEM CORPORATION, Philadelphia: 1 boule (90 carats, synthetic rutile), 3 faceted synthetic rutile gems (gift)

KOHLER, W. F., Seattle, Washington: 1 fossil plant specimen (*Metasequoia*)—Alaska (gift)

LANGFORD, GEORGE, Chicago: 104 fossil trilobites—Illinois (gift)

PAXSON, DILLWYN W., Fort Smith, Arkansas: portion of fossil palm-stem—locality unknown (gift)

REED, CHARLES A., Chicago: collection of small fossil mammals—Montana (gift)

RITCHIE, ARTHUR M., Olympia, Washington: 17 specimens of siderite concretions—Washington (gift)

ST. MARY'S SEMINARY, Techny, Illinois: 59 specimens of fossil invertebrates—Canada and Austria (gift)

SINCLAIR, G. WINSTON, Ann Arbor, Michigan: 8 fossil invertebrates, including holotype and paratype of *Calloconularia strimplei* Sinclair—various localities (gift)

SOUTH DAKOTA SCHOOL OF MINES, Rapid City: cast of lower jaw of fossil insectivore, *Parictis*—South Dakota (gift)

STAM, MARSHALL B., Salt Lake City: 15 fossil sunfish, 8 fossil minnows—Nevada (gift)

STEVENSON, R. E., Vermillion, South Dakota: 100 specimens of fossil protozoan, *Orbitolina*—Venezuela (gift)

STORM, MRS. CLAUDIUS, Chicago: collection of rocks and minerals—United States and Europe (gift)

WHITFIELD, JON S., Evanston, Illinois: 73 fossil plants—Tennessee; 26 fossil fishes—Wyoming (gift)

WHITFIELD, DR. AND MRS. R. H., Evanston, Illinois: collection of fossil plants and fossil invertebrates—Illinois (gift)

WILKE, EDWARD W., Chicago: specimens of granite—Illinois (gift)

DEPARTMENT OF ZOOLOGY—ACCESSIONS

ACOSTA Y LARA, EDUARDO, Montevideo, Uruguay: 3 mammals—Uruguay (gift)

AMERICAN MUSEUM OF NATURAL HISTORY, New York: 2 lizards (one paratype), 2 insects—various localities (exchange)

ARCTIC HEALTH RESEARCH CENTER, Anchorage, Alaska: 2 mammal skulls—Alaska (gift)

AUFFENBERG, WALTER, Gainesville, Florida: 1 snake (paratype)—Florida (gift)

AVERY, GEORGE N., Marathon, Florida: 3 shells—Japan (gift)

BEECHER, WILLIAM J., Chicago: 3 birds—Illinois (gift)

BENESH, BERNARD, Burrville, Tennessee: 3 reptiles and amphibians, 650 insects and their allies—Tennessee (gift)

BOGNAR, A., Whiting, Indiana: 2 birds—Indiana (gift)

BOKERMANN, WERNER C. A., São Paulo, Brazil: 17 frogs—Brazil (exchange)

BONETTO, DR. ARGENTINO A., Santa Fe, Argentina: collection of fresh-water clams—Argentina (gift)

BRITISH MUSEUM (NATURAL HISTORY), London: 1 fish, 538 insects—various localities (exchange); 1 horse-skin and skeleton—Haiti (gift)

CAMRAS, DR. SIDNEY, Chicago: 200 butterflies—United States (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Harry A. Beatty (West Africa Zoological Expedition, 1950–52): 6 mammals, 1,161 birds—West Africa

Collected by Walther Buchen, John G. Williams, and C. E. Cade (Buchen East Africa Zoological Expedition, 1952): 64 mammals, 189 birds, 2 boxes of bird eggs, 16 reptiles and amphibians, miscellaneous accessories for Nile marsh-bird exhibit—East Africa

Collected by Luis de la Torre (Guatemala Zoological Expedition, 1952): 572 mammals, 143 reptiles and amphibians—Guatemala and Mexico

Collected by Henry S. Dybas (from bat-skins in Museum collection): 352 insects

Collected by Dr. Fritz Haas (Florida Zoological Field Trip, 1952): 118 lots of mollusks—Florida

Collected by Philip Hershkovitz (Colombia Zoological Expedition, 1948–52): 1,840 mammals, 58 birds—Colombia

Collected by Bryan Patterson (Colorado Paleontological Expedition, 1947): 185 insects and their allies—Colorado

Collected by Clifford H. and Sarah Pope (Mexico Zoological Field Trip, 1952): 1,048 reptiles and amphibians—Mexico

Collected by D. S. Rabor (Mount Dapiak Zoological Expedition, 1952): 134 mammals, 359 birds, 158 reptiles and amphibians—Philippine Islands

Collected by Colin C. Sanborn (Aleutian Zoological Expedition, 1952): 11 mammals, 2 birds—Aleutian Islands

Collected by Dr. Rainer Zangerl (Austria Paleontological Expedition, 1952): 43 insects and allies—Austria

Purchases: 463 mammals, 2,400 birds, 26 bird nests, 15 sets of bird eggs, 355 reptiles and amphibians, 325 fishes, approximately 7,730 insects and their allies, 364 shells

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 7 mammals, 118 birds—various localities (gift)

COMPANHIA DE DIAMANTES DE ANGOLA, Porto, Portugal: 99 mammals—Angola (gift)

CORNFIELD, MELVIN, Hyattsville, Maryland: 4 snails Virginia (gift)

CORYDON MUSEUM, Nairobi, East Africa: 75 beetles—East Africa (exchange)

COWAN, DR. I. MCT., Vancouver, British Columbia, Canada: 1 bird—Canada (gift)

CRICHTON, V., Wellington, New Zealand: 2 beetles—New Zealand (gift)

CROWELL, ROBERT M., Wooster, Ohio: 5 slides of water mites—United States (gift)

CURTIS, LAWRENCE L., AND JAMES W. CRONIN, Dallas: 2 salamanders—Texas (gift)

DAHLGREN, DR. B. E., Chicago: 36 mammals, 11 reptiles and amphibians—Cuba (gift)

DAVIS, D. DWIGHT, Richton Park, Illinois, AND ROBERT F. INGER, Homewood, Illinois: 5 reptiles—Texas (gift)

DRAKE, CARL J., Ames, Iowa: 36 insects (18 paratypes)—various localities (gift)

DRAKE, ROBERT J., Aztec, New Mexico: 14 land shells—Sonora, Mexico (gift)

DUNDEE, HAROLD A., Lawrence, Kansas: 1 snake—Texas (gift)

DYBAS, HENRY S., Hazelcrest, Illinois: 392 insects—Mariana Islands (gift)

EIGSTI, W. E., Hastings, Nebraska: 32 insects—Nebraska (gift)

EISEMAN, RALPH M., Chicago: 2 frogs—Indiana (gift)

FEYERHERM, HARVEY A., De Kalb, Illinois: 1 frog—Illinois (gift)

FIELD, DR. HENRY, Washington, D.C.: 57 snakes, 4 fishes, 153 insects and their allies—various localities (gift)

FLEMING, DR. ROBERT L., Mussoorie, India: 318 birds—India and Nepal (exchange)

GAGE, FLOYD G., Wilmette, Illinois: 7 shells—various localities (gift)

GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago: 3 lizards, 1 fish, 4 lower invertebrates—British East Africa (gift)

GREEN, HOMER L., Zion, Illinois: 1 centipede—Illinois (gift)

GROW, RAY, Gary, Indiana: part of a bird—Indiana (gift)

GUERNSEY, GUY, South Haven, Michigan: 1 bird—Michigan (gift)

GUILLAUDEU, CAPTAIN ROBERT, Korea: 58 reptiles and amphibians, 196 fishes—Korea (gift)

HAAS, DR. FRITZ, Chicago: 12 fresh-water clams—Wisconsin (gift)

HAMILTON, DR. WILLIAM J., JR., Ithaca, New York: 1 mole—New York (gift)

HANSEN, HAROLD, Urbana, Illinois: 4 shells—Flagstaff Island, Canada (gift)

HARRY, HAROLD W., Columbia, Missouri: 750 lots of shells—various localities (gift)

HERBERT, LLOYD, Toms River, New Jersey: 3 turtles—New Jersey (gift)

HOOGSTRAAL, HARRY, Cairo, Egypt: 982 mammals, 18 birds, 893 reptiles and amphibians, 2,048 insects and their allies, 50 snails—Africa, Madagascar, Egypt, and Arabia (gift)

HUBRICHT, LESLIE, Danville, Virginia: 23 salamanders—United States (gift)

ILLINOIS STATE NATURAL HISTORY SURVEY, Urbana: 1 bird—Illinois (gift)

JANOVSKY, RICHARD, Lockport, Illinois: 1 mounted bird—Illinois (gift)

JAUME, MIGUEL L., Havana, Cuba: 75 shells—Cuba (gift)

JOHNSON, COLONEL H. A., Centralia, Washington: 15 shells—Washington (gift)

JOHNSON, RICHARD I., Belmont, Massachusetts: 137 lots of fresh-water clams—New England (gift)

JOHNSON, RUTH, Chicago: 1 salamander—Missouri (gift)

JONES, J. KNOX, JR., Lincoln, Nebraska: 41 mammals—United States (exchange)

JUST, DR. THEODOR, Oak Park, Illinois: 1 bird—Illinois (gift)

KEZER, DR. JAMES, Columbia, Missouri: 54 salamanders, 1 frog, 1 cave fish—United States (gift)

KISTNER, DAVID, Chicago: 39 beetles (2 paratypes)—various localities (gift)

KOBAYASHI, K., Kobe, Japan: 53 birds—Japan (exchange)

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LEKAGUL, DR. BOONSONG, Bangkok, Siam: 19 bats—Siam (gift)

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LINCOLN PARK ZOO, Chicago: 1 mammal, 2 birds—various localities (gift)

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LUTZ, DR. BERTHA, Rio de Janeiro, Brazil: 19 frogs—Brazil (gift)

MARINE STUDIOS, Marineland, Florida: 15 fishes—Florida east coast (gift)

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MEDEM, DR. FRED, Bogotá, Colombia: 3 crocodilians—Colombia (gift)

MOUNTJOY, RICHARD J., Chicago: 1 snake—Illinois (gift)

MUSEO ARGENTINO DE CIENCIAS NATURALES, Buenos Aires: 3 bats—Argentina (gift)

MUSEO DE HISTORIA NATURAL DE LA SALLE, Bogotá, Colombia: 46 mammals—Colombia (gift)

MUSEUM OF COMPARATIVE ZOOLOGY, Cambridge, Massachusetts: 2 lizards—New Guinea (exchange)

NATURAL HISTORY MUSEUM, Stanford University, California: 13 fishes (paratypes)—North Borneo (exchange)

NEW YORK STATE COLLEGE OF AGRICULTURE, AGRICULTURAL EXPERIMENT STATION, DEPARTMENT OF CONSERVATION, Cornell University, Ithaca: 60 sea lampreys—Cayuga Inlet, New York (gift)

NICHOLSON, DR. A. J., Billings, Montana: 11 porpoise skulls, 55 bats—Japan (gift)

NORTH BORNEO FISHERIES DEPARTMENT, Sandakan: 1,329 fishes—North Borneo (gift)

OHIO STATE UNIVERSITY, Columbus: 10 beetles—United States (exchange)

OLD, WILLIAM E., JR., Norfolk, Virginia: 20 lots of shells—various localities (gift)

OLIVARES, FATHER ANTONIO, Washington, D.C.: 80 birds—Colombia (exchange)

OLSON, R. EARL, Rockford, Illinois: 3 snakes—Illinois and Minnesota (gift)

PAIN, T., London: 11 shells—various localities (gift)

PEABODY MUSEUM, New Haven, Connecticut: 16 birds—various localities (exchange)

PEARSON, HARRY C., ESTATE OF: 9 zebra-skins, 3 lion-skins with skulls, 1 rhinoceros scalp with skull and horns, 6 ostrich eggs—Africa (gift)

PFLUEGER, ALBERT, North Miami, Florida: model of ocean sunfish (gift)

RAFFLES MUSEUM AND LIBRARY, Singapore: 4 catfishes—Malay Peninsula (exchange)

RAMOS, DR. J. A., Mayaguez, Puerto Rico: 1,946 fishes—Puerto Rico (gift)

RAUSCH, MAJOR ROBERT, Anchorage, Alaska: 2 mammals—Alaska (gift)

RAY, EUGENE, Chicago: 41 beetles—various localities (gift)

REED, HORACE B., Knoxville, Tennessee: 28 beetles—Tennessee (exchange)

RIJKSMUSEUM VON NATUURLIKE HISTORIE, Leiden, Netherlands: 3 reptiles—New Guinea and Java (exchange)

ROIG, DR. MARIO SANCHEZ, Havana, Cuba: 160 lots of shells—Cuba (gift)

ROMER, J. D., Hong Kong: 4 frogs—Hong Kong (gift)

ROSS, LILLIAN A., Chicago: 1 snake—Illinois (gift)

SCHUBART, DR. OTTO, São Paulo, Brazil: 21 lots of shells—Brazil (gift)

SCHWASS, HARLEY, Cook County (Illinois) Forest Preserve: 1 mammal—Illinois (gift)

SENCKENBERG MUSEUM, Frankfurt-am-Main, Germany: 1 frog—El Salvador (exchange)

SHEDD AQUARIUM, JOHN G., Chicago: 1 turtle—Gulf of Mexico (gift)

SHIRK, J. H., Peru, Indiana: 6 jaguar skulls—Venezuela (gift)

SICK, DR. HELMUT, Rio de Janeiro, Brazil: 1 snake, 173 lots of shells—Brazil (gift)

SOLEM, ALAN, Oak Park, Illinois: 115 lots of mollusks, echinoderms, and corals—various localities (gift)

SULLIVAN, JOHN P., III, Lake Zurich, Illinois: 1 crayfish—Illinois (gift)

TARRANT, ROSS, Palm Beach, Florida: 9 fishes—Florida (gift)

TARSHIS, I. BARRY, Berkeley, California: 20 flies—California (exchange)

TASHIAN, DR. RICHARD E., Brooklyn: 263 birds—Guatemala (exchange)

TEXAS, UNIVERSITY OF, Austin: 33 fishes (including 13 paratypes)—Texas (gift)

TEXAS GAME, FISH AND OYSTER COMMISSION, Rockport: 37 lots of marine invertebrates—Gulf of Mexico (gift)

TOMICH, P. QUENTIN, Robles de Rio, California: 358 insects—Egypt (gift)

TRAPIDO, DR. HAROLD, Panama, Panama: 903 reptiles and amphibians—Panama (gift)

TRAUB, LIEUTENANT COLONEL ROBERT, Washington, D.C.: 218 insects (2 types and 10 paratypes) various localities (gift)

TRAUTMAN, DR. M. B., Put-in-Bay, Ohio: 36 fishes—Ohio (exchange)

TULANE UNIVERSITY, New Orleans: 16 turtles (paratypes)—Louisiana (exchange)

UNITED STATES FISH AND WILDLIFE SERVICE, Pascagoula, Mississippi: 230 fishes—Gulf of Mexico (gift)

UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 1 fish—Panama (exchange)

UNIVERSIDAD NACIONAL DE TUCUMAN, Tucuman, Argentina: 47 frogs—Argentina (exchange)

WEBER, NEAL A., Swarthmore, Pennsylvania: 49 reptiles and amphibians—Iraq and Bahrein Island (gift)

WELD, DR. L. H., Arlington, Virginia: 109 insects (including 63 paratypes)—various localities (gift)

WELLS, LIEUTENANT (J.G.) WILLIAM H., Bethesda, Maryland: 3 bats, 4 frogs—Venezuela (gift)

WERNER, DR. FLOYD, Burlington, Vermont: 450 beetles—North America (exchange)

WHITE, FRED N., Houston, Texas: 1 snake—Texas (gift)

WISCONSIN, UNIVERSITY OF, DEPARTMENT OF ENTOMOLOGY, Madison: 20 beetles—Wisconsin (gift)

WOEHLCK, KENNETH H. (address lacking): 4 birds—Illinois (gift)

WOLFFSOHN, A., Gallon Jug, British Honduras: 12 reptiles—British Honduras (gift)

YOUNG, DR. F. N., Bloomington, Indiana: 2 beetles—Indiana (exchange)

ZANGERL, DR. RAINER, Hazelcrest, Illinois: 1 snake—Austria (gift)

ZIEMER, AUGUST, Evergreen Park, Illinois: 217 insects—United States (exchange)

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BAYALIS, JOHN, Chicago: 6 2x2 natural-color (original) slides (gift)

DIVISION OF PHOTOGRAPHY—ACCESSIONS

CHICAGO NATURAL HISTORY MUSEUM: 2,224 negatives, 16,643 prints, 1,040 enlargements, 125 lantern slides
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DIVISION OF MOTION PICTURES—ACCESSIONS

CHICAGO NATURAL HISTORY MUSEUM:
Made by D. Dwight Davis: 400 feet of 16mm black-and-white film and 1 print of "Field Studies of Animal Locomotion" (Borneo Zoological Expedition, 1950); about 600 feet of 16mm color film for "Trailside Adventures"

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Representative Accessions

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BOOKS

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- Beddome, Richard Henry, *Icones plantarum Indiae Orientalis* (1874)
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- Bourguignat, Jules René, *Catalogue raisonné des mollusques terrestres et fluviatiles recueillis par M. F. de Saulay pendant son voyage en Orient* (1853)
- , *Matériaux pour servir à l'histoire des mollusques Acéphales du système européen* (1880-81)
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- Franchet, Adrien, *Enumeratio plantarum in Japonia sponte crescentium hucusque rite cognitarum, adjectis descriptionibus specierum pro regione novarum . . .* (1875-79)
- Grateloup, Jean Pierre Sylvestre de, *Catalogue des mollusques terrestres et fluviatiles vivants et fossiles, de la France continentale et insulaire, par ordre alphabétique* (1855)

- Grøntved, Johannes, and Thorvald Sorensen, *Botany of Iceland*, v. 1-3, v. 4, pt. 1, v. 5, pt. 1 (1912-49)
- Handel-Mazzetti, Heinrich Raphael Eduard, Freiherr von, *Symbolae Sinicae*, 7 v. in 3 (1929-37)
- Handschin, Eduard, *Praktische Einführung in die Morphologie der Insekten* (1928)
- Hannig, Emil, and Hubert Winkler, eds., *Die Pflanzenareale*, Reihe 1-4, Reihe 5, heft 1/2 (1926-40)
- Hutton, James, *Theory of the earth*, 2 v. (1795)
- Jousseume, Felix, *Mollusques terrestres; Clausilia, Rhodaea et Bulimus Sud-Americaines* (1900)
- Kobelt, Wilhelm, *Illustrirtes Conchylien-Buch*, 2 v. (1876-81)
- Koorders, Sijfert Hendrik, *Exkursionsflora von Java* . . . 4 v. (1911-37)
- Lacordaire, Jean Théodore, *Introduction a l'entomologie*, 2 v. (1834)
- Lindner, Erwin, ed., *Die Fliegen der palarktischen Region*, Lief 1— (1925—)
- Lundbeck, William, *Diptera Danica; genera and species of flies hitherto found in Denmark*, 7 v. in 5 (1907-27)
- Michaelson, Johann Wilhelm, and Robert Hartmeyer, *Die Fauna Südwest-Australiens. Ergebnisse der Südwest-Australischen Forschungsreise, 1905*, 5 v. (1907-30)
- Müller, J., *Vergleichende Anatomie der Myxinoideen*, pts. 1-4 (1835-45)
- Nicoll, Michael John, *Nicoll's birds of Egypt*, by Richard Meinertzhagen, 2 v. (1930)
- Nieremberg, Juan Eusebio, *Historia naturae, maxime peregrinae, libris XVI, distincta* (1635)
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- Owen, Charles, *An essay towards a natural history of serpents* (1742)
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- Popta, C. M. L., *Resultats ichthyologiques des voyages scientifiques de Monsieur le Professeur Dr. A. W. Nieuwenhuis dans le centre de Borneo, 1893 et 1900* (1906)
- Priest, Cecil Damer, *Birds of Southern Rhodesia*, 4 v. (1933-36)
- Progressus Rei Botanicae*, ed. by J. P. Lötzy, v. 1-3 (1907-09)
- Redtenbacher, Ludwig, *Fauna austriaca. Die Käfer* (1858)
- Richter, Karl, *Plantae europaeae*, v. 1-2, pt. 3 (1890-1903)
- Schimer, Ignatz Rudolph, *Fauna austriaca: Die Fliegen (Diptera)*, 2 v. (1862-64)
- Schimper, Andreas Franz Wilhelm, *Pflanzengeographie auf physiologischer Grundlage*, 2 v. (1935)
- Sinclair, George, *Hortus gramineus Woburnensis*, 3rd ed. (1826)
- Sweet, Robert, *Flora australasica* (1827-28)
- Wagler, Johann Georg, *Descriptiones et Icones Amphibiorum*, 3 pts. (1828-33)
- Walker, Francis, *Catalogue of the specimens of Dermaptera Saltatoria (Part 1) and Supplement to the Blattariae in the collection of the British Museum*, 5 v. (1869-71)
- Weinkauff, H., *Die Conchylien des Mittelmeeres, ihre geographische und geologische Verbreitung*, 2 v. (1867-68)
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- Winkler, Albert, ed., *Catalogus Coleopterorum regionis palaearcticae* (1924-32)

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- Dansk Ornithologisk Forening, Copenhagen. *Tidsskrift*, v. 27-45 (1933-51)

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- Entomologiske meddelelser*. Entomologisk forening. Kjøbenhavn, v. 25— (1947—)
- L'Entomologiste*. *Revue d'Amateurs*, v. 1-8— (1945-52—)
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- Indian Academy of Sciences. *Proceedings*, sec. B., v. 1-7 (1934-38)
- Kontyu*. Entomological Society of Japan, v. 1-16 (1926-42)
- Naturwissenschaftliche Rundschau*, v. 1-11 (1886-96), v. 16-19 (1901-4), v. 23-25 (1908-9)
- New phytologist*, v. 46— (1947—)
- Oikos; Acta ecologica scandinavica*. *Supplementum*, v. 1— (1951—)
- Revue algologique*, v. 6-10 (1931-38)
- Revue bryologique et lichénologique*, n.s., v. 1-20 (1928-51)
- Revue de zoologie et de botanique africaines*, v. 35-45— (1941-52—)
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- Royal Society of London. *Philosophical transactions*, v. 178-232 (1887-47)
- , *Proceedings*, ser. B (1905-44)
- Société Entomologique de France. *Annales*, ser. 6, v. 112-120 (1946-52)
- , *Bulletin*, v. 1-56 (1896-51)
- Stettiner Entomologische Zeitung*, v. 1-76 (1840-86)
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- Zeitschrift für Ethnologie* (Deutsche Gesellschaft für Völkerkunde), v. 70, pt. 6, v. 71-75 (1938-50)
- Zeitschrift für Wissenschaftliche Insektenbiologie*, n.s., v. 17-19 (1922-24)

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 Faithorn, Walter E.
 Falk, Miss Amy
 Fallon, Mrs. J. B.
 Fallon, Dr. W. Raymond
 Falls, Dr. A. G.
 Farnham, Mrs. Harry J.
 Farrell, Mrs. B. J.
 Farwell, John V., III
 Faulkner, Charles J.
 Faulkner, Miss Elizabeth
 Faurot, Henry, Jr.
 Favill, Mrs. John
 Fay, Eugene C.
 Feiwell, Morris E.
 Felix, Benjamin B.
 Fellows, William K.
 Felsenthal, Edward
 George
 Fennekohl, Mrs.
 Arthur C.
 Fernald, Robert W.
 Ferry, Mrs. Frank F.
 Fetzner, Wade
 Filkins, A. J.
 Fineman, Oscar
 Finley, Max H.
 Finnegan, Richard J.
 Finnerud, Dr. Clark W.
 Firsell, Maurice S.
 Fischel, Frederic A.
 Fish, Mrs. Helen S.
 Fishbein, Dr. Morris
 Fisher, Harry M.
 Fisk, Mrs. Burnham M.
 Fitzpatrick, Mrs. John A.
 Flavin, Edwin F.
 Fleming, Mrs. Joseph B.
 Florsheim, Harold M.
 Florsheim, Irving S.
 Florsheim, Mrs.
 Milton S.
 Folonie, Mrs. Robert J.
 Folsom, Mrs. William R.
 Foote, Mrs. Harley T.
 Forch, Mrs. John L., Jr.
 Ford, Mrs. Willis Roland
 Foreman, Mrs. Alfred K.
 Foreman, Mrs. E. G.
 Foreman, Edwin G., Jr.
 Foreman, Harold E.
 Forgan, James B.
- Forgan, Mrs. J. Russell
 Forgan, Robert D.
 Forman, Charles
 Forster, J. George
 Fortune, Miss Joanna
 Foster, Mrs. Charles K.
 Fox, Jacob Logan
 Fox, Dr. Paul C.
 Franche, Mrs. D. C., III
 Frank, Arthur A.
 Frankel, Louis
 Frankenstein, William B.
 Frankenthal, Dr.
 Lester E., Jr.
 Franklin, Egington
 Frazer, Mrs. George E.
 Freedman, Dr. I. Val
 Freeman, Charles Y.
 Freiler, Abraham J.
 French, Dudley K.
 Frenier, A. B.
 Freudenthal, G. S.
 Frey, Charles Daniel
 Freyn, Henry J.
 Fridstein, Meyer
 Friedlich, Mrs. Herbert
 Friestedt, Arthur A.
 Fuller, Mrs. Gretta
 Patterson
 Fuller, J. E.
 Fuller, Judson M.
 Furry, William S.
- Gabriel, Adam
 Gaertner, William
 Galgano, John H.
 Gall, Charles H.
 Gall, Harry T.
 Gallup, Rockwell L.
 Galt, Mrs. A. T.
 Gamble, D. E.
 Garcia, José
 Garden, Hugh M. G.
 Gardiner, Mrs. John L.
 Gardner, Addison L., Jr.
 Gardner, Henry A.
 Gardner, Mrs. James P.
 Garen, Joseph F.
 Garnett, Joseph B.
 Garrison, Dr. Lester E.
 Gates, Mrs. L. F.
 Gawne, Miss Clara V.
 Gay, Rev. A. Royal
 Gear, H. B.
 Gehl, Dr. W. H.
 Gehrman, Felix
 Geiger, Alfred B.
 Geiling, Dr. E. M. K.
 Geittmann, Dr. W. F.
 Geldmeier, Dr. Erwin F.
 Gellert, Donald N.
 Gensburg, Samuel H.
- Gentry, Veit
 Gentz, Miss Margaret
 Nina
 Gerber, Max
 Gerding, R. W.
 Gerngross, Mrs. Leo
 Gerstley, Dr. Jesse R.
 Gettelman, Mrs.
 Sidney H.
 Gettleman, Frank E.
 Getz, Mrs. James R.
 Getzoff, E. B.
 Gibbs, Richard F.
 Gibson, Dr. Stanley
 Gidwitz, Alan K.
 Giffey, Miss Hertha
 Gifford, Mrs.
 Frederick C.
 Gilchrist, Mrs. John F.
 Gilchrist, Mrs. William
 Albert
 Giles, Mrs. Guy H.
 Gillette, Mrs. Ellen D.
 Gilmore, Dr. John H.
 Gimbel, J. W., Jr.
 Ginder, Miss Minnie C.
 Giryotas, Dr. Emelia J.
 Glaescher, Mrs. G. W.
 Glasner, Rudolph W.
 Glasser, Joshua B.
 Goes, Mrs. Arthur A.
 Golden, Dr. Isaac J. K.
 Golding, Robert N.
 Goldman, Mrs. Louis
 Goldstein, Dr. Helen L.
 Button
 Goldstein, Nathan S.
 Goldstine, Dr. Mark T.
 Goldy, Walter I.
 Goltra, Mrs. William B.
 Goode, Mrs. Rowland T.
 Gooden, G. E.
 Goodman, Benedict K.
 Goodman, Mrs. Milton F.
 Goodman, W. J.
 Goodman, William E.
 Goodwin, Clarence
 Norton
 Goodwin, George S.
 Gordon, Colin S.
 Gordon, Harold J.
 Gordon, Dr. Richard J.
 Gordon, Mrs. Robert D.
 Gorrell, Mrs. Warren
 Gottlieb, Frederick M.
 Gould, Jay
 Gould, Mrs. June K.
 Grade, Joseph Y.
 Graff, Oscar C.
 Graham, Douglas
 Graham, E. V.

ASSOCIATE MEMBERS (continued)

- Graham, Miss Margaret H.
Gramm, Mrs. Helen
Granger, Mrs. Lillian M.
Grant, James D.
Grant, John G.
Graves, Austin T.
Graves, Howard B.
Grawoig, Allen
Gray, Dr. Earle
Gray, Edward
Gray, Philip S.
Green, Michael
Green, Robert D.
Greenacre, Miss Cordelia Ann
Greenburg, Dr. Ira E.
Greene, Henry E.
Greene, Howard T.
Greenlee, Mrs. William Brooks
Greenman, Mrs. Earl C.
Gregory, Stephen S., Jr.
Gregory, Tappan
Gressens, Otto
Grey, Dr. Dorothy
Griest, Mrs. Marianna L.
Griffenhagen, Mrs. Edwin O.
Griffith, Mrs. Carroll L.
Griffith, Mrs. William
Griswold, Harold T.
Grizzard, James A.
Groak, Irwin D.
Gronkowski, Rev. C. I.
Groot, Cornelius J.
Groot, Lawrence A.
Gross, Henry R.
Grossman, Frank I.
Grothenhuis, Mrs. William J.
Grotowski, Mrs. Leon
Gruhn, Alvah V.
Grunow, Mrs. William C.
Guenzel, Louis
Guest, Ward E.
Gurley, Miss Helen K.
Gurman, Samuel P.
Gustafson, Gilbert E.
Guthman, Edwin I.
Gwinn, William R.

Hadley, Mrs. Edwin M.
Haffner, Mrs. Charles C., Jr.
Hagen, Mrs. Daise
Haight, George I.
Hair, T. R.
Hajicek, Rudolph F.
Haldeman, Walter S.
Hale, Mrs. Samuel
Hales, William M.

Hall, Edward B.
Hall, Mrs. J. B.
Halligan, W. J.
Hallmann, Herman F.
Halperin, Aaron
Halverstadt, Romaine M.
Hamm, Fred B.
Hammaker, Paul M.
Hammerschmidt, Mrs. George F.
Hand, George W.
Hanley, Henry L.
Hann, J. Roberts
Hansen, Mrs. Carl
Hansen, Mrs. Fred A.
Hansen, Jacob W.
Hanson, Mrs. Norman R.
Harder, John H.
Harders, Mrs. Flora
Rassweiler
Harding, John Cowden
Harms, VanDeursen
Harper, Alfred C.
Harrington, David L.
Harris, Mrs. Abraham
Harris, David J.
Harris, Gordon L.
Harris, Stanley G.
Hart, Mrs. Herbert L.
Hart, Max A.
Hart, William M.
Hartmann, A. O.
Hartshorn, Kenneth L.
Hartwig, Otto J.
Hartz, W. Homer
Harvey, Byron, III
Harvey, Richard M.
Harwood, Thomas W.
Haskell, Mrs. George E.
Hass, G. C.
Hay, Mrs. William Sherman
Hayakawa, Dr. S. I.
Hayes, Charles M.
Hayes, Harold C.
Hayes, Miss Mary E.
Haynie, Miss Rachel W.
Hays, Mrs. Arthur A.
Hayslett, Arthur J.
Hazlett, Dr. William H.
Hazlett, Mrs. William H.
Healy, Vincent Jerrems
Heaney, Dr. N. Sproat
Hearst, Mrs. Jack W.
Heaton, Harry E.
Heaton, Herman C.
Heffernan, Miss Lili
Hefner, Adam
Heide, Mrs. Bernard H.
Heiman, Marcus
Heinzelman, Karl
Heinzen, Mrs. Carl

Heisler, Francis
Hejna, Joseph F.
Heldmaier, Miss Marie
Helfrich, J. Howard
Heller, Albert
Heller, John A.
Heller, Mrs. Walter E.
Hellman, George A.
Hellyer, Walter
Hemple, Miss Anne C.
Henderson, Kenneth M.
Henkel, Frederick W.
Henley, Dr. Eugene H.
Hennings, Mrs. Abraham J.
Henry, Huntington B.
Henschel, Edmund C.
Herbst, LeRoy B.
Herron, James C.
Herron, Mrs. Oliver L.
Hershey, J. Clarence
Hertz, Mrs. Fred
Hertzberg, Lawrence
Herwig, George
Herwig, William D., Jr.
Herz, Mrs. Alfred
Hesse, E. E.
Heverly, Earl L.
Hibbard, Mrs. Angus S.
Hibbard, Mrs. W. G.
Hieber, Master J. Patrick
Higley, Mrs. Charles W.
Hildebrand, Dr. Eugene, Jr.
Hildebrand, Grant M.
Hill, Mrs. Russell D.
Hille, Dr. Hermann
Hillebrecht, Herbert E.
Hills, Edward R.
Hind, Mrs. John Dwight
Hinman, Mrs. Estelle S.
Hinrichs, Henry, Jr.
Hintz, Mrs. Aurelia Bertol
Hirsch, Jacob H.
Histed, J. Roland
Hixon, Mrs. Frank P.
Hodgkinson, Mrs. W. R.
Hodgson, Mrs. G. C.
Hoefman, Harold L.
Hoffman, Miss Elizabeth
Hoffmann, Edward
Hempstead
Hogan, Robert E.
Hokin, Mrs. Barney E.
Holabird, W. S., Jr.
Holden, Edward A.
Hollander, Mrs. Samuel
Holleb, A. Paul
Hollenbach, Louis
Holliday, W. J.

ASSOCIATE MEMBERS (continued)

- Hollis, Henry L.
Holmburger, Max
Holmes, George J.
Holmes, Miss Harriet F.
Holmes, J. A.
Holmes, Mrs. Maud G.
Holmes, William
Holmes, William N.
Holt, Miss Ellen
Holt, McPherson
Holub, Anthony S.
Holzheimer, Carl
Homan, Miss Blossom L.
Honsik, Mrs. James M.
Hoover, Mrs. Fred W.
Hoover, H. Earl
Hoover, Ray P.
Hope, Alfred S.
Hopkins, Albert L.
Hopkins, Mrs. James M.
Hopkins, Mrs. James M., Jr.
Horcher, William W.
Horne, Mrs. William Dodge, Jr.
Horner, Mrs. Maurice L., Jr.
Hornung, Joseph J.
Horton, Mrs. Helen
Horton, Horace B.
Horween, Arnold
Horween, Isidore
Hosbein, Louis H.
Hovland, Mrs. John P.
Howard, Willis G.
Howe, Charles Albee
Howe, Clinton W.
Howe, Mrs. Pierce Layman
Howe, Ralph B.
Howe, Roger F.
Howes, Mrs. Frank W.
Howie, Mrs. James E.
Howse, Richard G.
Howson, Louis R.
Hoyne, Miss Susan D.
Hoyt, Mrs. Phelps B.
Hraback, L. W.
Hrdlicka, Mrs. John D.
Hubbard, George W.
Huber, Dr. Harry Lee
Hudson, Miss Katherine J.
Hudson, Walter L.
Huey, Mrs. A. S.
Hufty, Mrs. F. P.
Huggins, Dr. Ben H.
Hughes, John E.
Hume, James P.
Humphrey, H. K.
Huncke, Herbert S.
Huncke, Oswald W.
- Hunding, B. N.
Hurd, Ferris E.
Hurvitz, H. R.
Huska, Mrs. Joseph
Hust, George
Huszagh, Ralph D.
Hutchinson, Foye P.
Hutchinson, Samuel S.
Hyatt, R. C.
- Ickes, Raymond W.
Idelman, Bernard
Igo, Michael L.
Ilg, Robert A.
Illich, George M., Jr.
Ingalls, Allin K.
Inlander, N. Newton
Inlander, Samuel
Irons, Dr. Ernest E.
Isaacs, Charles W., Jr.
Isham, Henry P.
Ives, Clifford E.
- Jackson, Allan
Jackson, Archer L.
Jackson, Mrs. Arthur S.
Jackson, Miss Laura E.
Jackson, Mrs. W. A.
Jacobi, Miss Emily C.
Jacobs, Julius
Jacobs, Mrs. Walter H.
Jacobson, Raphael
James, Walter C.
Jameson, Clarence W.
Jancosek, Thomas A.
Janson, Dr. C. Helge M.
Janusch, Fred W.
Jarchow, Mrs. C. E.
Jarchow, Charles C.
Jarrow, Harry W.
Jeffreys, Mrs. Mary M.
Jeffries, Dr. Daniel W.
Jenkinson, Mrs. Arthur Gilbert
Jennings, Ode D.
Jerger, Wilbur Joseph
Jetzinger, David
Jirgal, John
Jirka, Dr. Frank J.
John, Dr. Findley D.
Johnson, Dr. Adelaide
Johnson, Alvin O.
Johnson, Calmer L.
Johnson, Mrs. Harley Alden
Johnson, Joseph M.
Johnson, Nels E.
Johnson, Mrs. O. W.
Johnson, Olaf B.
Johnson, Philip C.
Johnston, Edward R.
Johnston, Miss Fannie S.
- Johnston, Mrs. Hubert McBean
Johnston, Mrs. M. L.
Jolly, Miss Eva Josephine
Jonak, Frank J.
Jones, Mrs. C. A.
Jones, James B.
Jones, Dr. Margaret M.
Jones, Melvin
Jones, Miss Susan E.
Joseph, Mrs. Jacob G.
Joseph, Louis L.
Joy, Guy A.
Judson, Clay
Juergens, H. Paul
Julien, Victor R.
- Kahn, Mrs. Arthur S.
Kahn, J. Kesner
Kahn, Jerome J.
Kahn, Louis
Kaïne, James B.
Kamins, Dr. Maclyn M.
Kane, Jerome M.
Kanter, Jerome J.
Kaplan, Morris I.
Kasch, Frederick M.
Katz, Mrs. Sidney L.
Katz, Solomon
Katzenstein, Mrs. George P.
Katzin, Frank
Kauffman, Mrs. R. K.
Kauffmann, Alfred
Kauffman, Justin
Kauffmann, Dr. Gustav L.
Kavanagh, Clarence H.
Kay, Mrs. Marie E.
Keefe, Mrs. George I.
Kehl, Robert Joseph
Kehoe, Mrs. High Boles
Keith, Stanley
Keith, Mrs. Stanley
Kelker, Rudolph F., Jr.
Kelly, Mrs. Haven Core
Kelly, Miss Katherine Marjorie
Kelly, William J.
Kemper, Hathaway G.
Kemper, Miss Hilda M.
Kempner, Harry B.
Kempner, Stan
Kendall, Mrs. Virginia H.
Kendrick, John F.
Kennedy, Mrs. E. J.
Kennedy, Lesley
Kennelly, Martin H.
Kenney, Clarence B.
Kent, Dr. O. B.
Keogh, Gordon E.
Kern, Mrs. August

ASSOCIATE MEMBERS *(continued)*

- Kern, H. A.
 Kern, Dr. Nicholas H.
 Kern, Trude
 Kerwin, Edward M.
 Kestnbaum, Meyer
 Kettering, Mrs.
 Eugene W.
 Kew, Mrs. Stephen M.
 Kidwell, L. B.
 Kiessling, Mrs. Charles S.
 Kile, Miss Jessie J.
 Kimball, David W.
 Kimball, William W.
 Kimbark, John R.
 King, Clinton B.
 King, Joseph H.
 Kingman, Mrs. Arthur G.
 Kinsey, Robert S.
 Kirkland, Mrs.
 Weymouth
 Kirst, Lyman R.
 Kitchell, Howell W.
 Kitzelman, Otto
 Kleinpell, Dr. Henry H.
 Kleist, Mrs. Harry
 Kleppinger, William H.
 Kleutgen, Dr. Arthur C.
 Klinetop, Mrs. Charles W.
 Knickerbocker, Miss
 Paula
 Knopf, Andrew J.
 Knutson, George H.
 Koch, Mrs. Fred J.
 Koch, Raymond J.
 Koch, Robert J.
 Kochs, August
 Koehnlein, Wilson O.
 Kohler, Eric L.
 Konsberg, Alvin V.
 Kopf, Miss Isabel
 Koppenaar, Dr.
 Elizabeth Thompson
 Kornblith, Mrs.
 Howard G.
 Kosobud, William F.
 Kotal, John A.
 Kotin, George N.
 Koucky, Dr. J. D.
 Kovac, Stefan
 Krafft, Mrs. Walter A.
 Kraft, James L.
 Kraft, John H.
 Kraft, Norman
 Kralovec, Emil G.
 Kralovec, Mrs. Otto J.
 Kramer, Leroy
 Kraus, Peter J.
 Kraus, Samuel B.
 Krautter, L. Martin
 Kresl, Carl
 Kretschmer,
 Herman L., Jr.
 Krez, Leonard O.
 Kroehler, Kenneth
 Kropff, C. G.
 Krost, Dr. Gerard N.
 Kuehn, A. L.
 Kuh, Mrs. Edwin J., Jr.
 Kuhn, Frederick T.
 Kuhn, Dr. Hedwig S.
 Kunka, Bernard J.
 Kunstadter, Albert
 Kunstadter, Sigmund W.
 Kurfess, John Fredric
 Kurtz, W. O.
 Kurtzon, Morris
 Lacey, Miss Edith M.
 Laffin, Louis E., Jr.
 Laffin, Louis E., III
 Lambert, C. A.
 Lampert, Wilson W.
 Lanahan, Mrs. M. J.
 Lane, F. Howard
 Lane, Ray E.
 Lang, Edward J.
 Langenbach, Mrs. Alice R.
 Langford, Mrs.
 Robert E.
 Langhorne, George
 Tayloe
 Lanman, E. B.
 Lansinger, Mrs. John M.
 Larimer, Howard S.
 Larsen, Samuel A.
 Larson, Mrs. Sarah G.
 Lassers, Sanford B.
 Latshaw, Dr. Blair S.
 Lauren, Newton B.
 Lautmann, Herbert M.
 Lavers, A. W.
 Lavezzorio, Mrs. J. B.
 Lavidge, Arthur W.
 Law, Mrs. Robert O.
 Lawless, Dr. Theodore K.
 Lawson, David A.
 Lax, John Franklin
 Layden, Michael J.
 Lazar, Maurice
 Lazear, George C.
 Leahy, James F.
 Leahy, Thomas F.
 Leavell, James R.
 LeBaron, Miss Edna
 Lebold, Foreman N.
 Lebold, Samuel N.
 Lebolt, John Michael
 Lederer, Dr. Francis L.
 Lee, David Arthur
 Lee, Mrs. John H. S.
 Lefens, Miss Katherine J.
 Lefens, Walter C.
 Leichenko, Peter M.
 Leight, Mrs. Albert E.
 Leland, Miss Alice J.
 Leland, Mrs. Rosco G.
 LeMoon, A. R.
 Lennon, George W.
 Lenz, J. Mayo
 Leonard, Arthur T.
 Lerch, William H.
 Leslie, Dr. Eleanor I.
 Leslie, John Woodworth
 Lessman, Gerhard
 LeTourneau, Mrs.
 Robert
 Leverone, Louis E.
 Levinson, Mrs. Salmon O.
 Levitan, Benjamin
 Levitetz, Nathan
 Levy, Alexander M.
 Levy, Arthur G.
 Lewis, Mrs. Ellis R.
 Lewy, Dr. Alfred
 L'Hommedieu, Arthur
 Liebman, A. J.
 Lillyblade, Clarence O.
 Lindahl, Mrs. Edward J.
 Linden, John A.
 Lindheimer, B. F.
 Lingle, Bowman C.
 Liss, Samuel
 Little, Mrs. E. H.
 Littler, Harry E., Jr.
 Livingston, Julian M.
 Livingston, Mrs.
 Milton L.
 Llewellyn, Paul
 Lloyd, Glen A.
 Lochman, Philip
 Loeb, Hamilton M.
 Loewenberg, Israel S.
 Loewenberg, M. L.
 Loewenherz, Emanuel
 Loewenstein, Richard M.
 Loewenthal, Richard J.
 Logan, L. B.
 Long, William E.
 Loomis, Reamer G.
 Lord, Arthur R.
 Lord, John S.
 Lord, Mrs. Russell
 Loucks, Charles O.
 Louer, Albert E. M.
 Louis, Mrs. John J.
 Love, Chase W.
 Lovgren, Carl
 Lucey, Patrick J.
 Ludolph, Wilbur M.
 Lueder, Arthur C.
 Lunding, Franklin J.
 Luria, Herbert A.
 Lusk, R. R.
 Lustgarten, Samuel
 Lydon, Robert R.
 Lyford, Harry B.

ASSOCIATE MEMBERS (continued)

- Lynch, J. W.
 Lyon, Charles H.
- Mabee, Mrs. Melbourne
 MacDonald, E. K.
 MacIntyre, Mrs. M. K.
 MacKenzie, William J.
 Mackey, Frank J.
 Mackinson, Dr. John C.
 MacLellan, K. F.
 MacMullen, Dr. Della M.
 MacMurray, Mrs.
 Donald
 Madlener, Mrs.
 Albert F., Jr.
 Madlener, Otto
 Maehler, Edgar E.
 Magan, Miss Jane A.
 Magerstadt, Madeline
 Magill, John R.
 Magnus, Albert, Jr.
 Magnuson, Mrs. Paul
 Maher, Mrs. D. W.
 Main, Walter D.
 Majors, Mrs. B. S.
 Maling, Albert
 Malone, William H.
 Manaster, Harry
 Mandel, Mrs. Aaron W.
 Mandel, Edwin F.
 Mandel, Miss Florence
 Mandel, Mrs. Robert
 Manegold, Mrs. Frank W.
 Manierre, Francis E.
 Manierre, Louis
 Manley, John A.
 Maremont, Arnold H.
 Mark, Mrs. Cyrus
 Mark, Griffith
 Marquart, Arthur A.
 Marsh, A. Fletcher
 Marsh, John
 McWilliams, II
 Marsh, Mrs. John P.
 Marsh, Mrs. Marshall S.
 Marston, Mrs. Thomas B.
 Martin, Mrs. George B.
 Martin, George F.
 Martin, Samuel H.
 Martin, Wells
 Martin, Mrs. William P.
 Marx, Adolf
 Marx, Frederick Z.
 Marzluff, Frank W.
 Marzola, Leo A.
 Mason, Willard J.
 Masee, B. A.
 Massey, Peter J.
 Masterson, Peter
 Mathesius, Mrs. Walther
 Matson, J. Edward
 Matter, Mrs. John
- Maurer, Dr. Siegfried
 Maxant, Basil
 Maxwell, Lloyd R.
 Mayer, Frank D.
 Mayer, Mrs. Herbert G.
 Mayer, Herman J., Jr.
 Mayer, Isaac H.
 Mayer, Leo
 Mayer, Oscar F.
 Mayer, Oscar G.
 Mayer, Theodore S.
 Mazurek, Miss Olive
 McAloon, Owen J.
 McArthur, Billings M.
 McBirney, Mrs. Hugh J.
 McCahey, James B.
 McCarthy, Edmond J.
 McCarthy, Joseph W.
 McCausland, Mrs.
 Clara L.
 McClun, John M.
 McCord, Downer
 McCormack, Prof. Harry
 McCormick, Mrs.
 Chauncey
 McCormick, Fowler
 McCormick, Howard H.
 McCormick, Leander J.
 McCormick,
 Robert H., Jr.
 McCrea, Mrs. W. S.
 McCready, Mrs. E. W.
 McCreight, Louis Ralph
 McCutcheon, Mrs.
 John T.
 McDonald, E. F., Jr.
 McDonald, Lewis
 McDougal, Mrs. James B.
 McDougal, Mrs. Robert
 McErlean, Charles V.
 McGraw, Max
 McGurn, Matthew S.
 McIntosh, Arthur T.
 McIntosh, Mrs.
 Walter G.
 McKenna, Dr. Charles H.
 McKinney, Mrs. Hayes
 McLennan, Donald R., Jr.
 McLennan, Mrs. Donald
 R., Sr.
 McMenemy, Logan T.
 McMillan, James G.
 McMillan, John
 McMillan, W. B.
 McNamara, Louis G.
 McNamee, Peter F.
 McNulty, Joseph D.
 McQuarrie, Mrs. Fannie
 McVoy, John M.
 Mead, Dr. Henry C. A.
 Medsker, Dr. Ora L.
 Melcher, George Clinch
- Melnick, Leopold B.
 Merrell, John H.
 Merriam, Miss Eleanor
 Merrill, Miss Marion E.
 Merrill, William W.
 Metz, Dr. Arthur R.
 Meyer, Mrs. A. H.
 Meyer, Abraham W.
 Meyer, Dr. Charles A.
 Meyer, Charles Z.
 Meyerhoff, A. E.
 Meyers, Erwin A.
 Meyers, Jonas
 Michaels, Everett B.
 Michel, Dr. William J.
 Midowicz, C. E.
 Mielenz, Robert K.
 Milburn, Miss Anne L.
 Milhening, Frank
 Miller, Miss Bertie E.
 Miller, Mrs. Clayton W.
 Miller, Mrs. Donald J.
 Miller, Mrs. F. H.
 Miller, Hyman
 Miller, John S.
 Miller, Mrs. Olive
 Beaupre
 Miller, Oscar C.
 Miller, Mrs. Phillip
 Miller, R. T.
 Mills, Allen G.
 Mills, Lloyd Langdon
 Miner, Dr. Carl S.
 Minturn, Benjamin E.
 Mitchell, John J.
 Mitchell, Leeds
 Mitchell, Oliver
 Mock, Dr. Harry Edgar
 Moderwell, Charles M.
 Moeling, Mrs. Walter G.
 Moist, Mrs. Samuel E.
 Mojonner, Timothy
 Mollan, Mrs. Ferne T.
 Molloy, David J.
 Mong, Mrs. C. R.
 Monheimer, Henry I.
 Monroe, William S.
 Moore, Paul
 Moore, Philip Wyatt
 Moran, Miss Margaret
 Morey, Dr. Charles W.
 Morf, F. William
 Morrison, Mrs. C. R.
 Morrison, Mrs. Harry
 Morrison, James C.
 Morrow, Mrs. John, Jr.
 Morse, Mrs. Charles J.
 Morse, Leland R.
 Morse, Mrs. Milton M.
 Morse, Robert H.
 Morton, Sterling
 Morton, William Morris

ASSOCIATE MEMBERS (continued)

- Moses, Howard A.
 Moss, Jerome A.
 Mouat, Andrew J.
 Moxon, Dr. George W.
 Moyer, E. J. T.
 Moyer, Mrs. Paul S.
 Mudge, Mrs. John B.
 Muehlstein, Mrs. Charles
 Mueller, Austin M.
 Mueller, Miss Hedwig H.
 Mueller, J. Herbert
 Mueller, Paul H.
 Mulford, Miss Melinda
 Jane
 Mulhern, Edward F.
 Munroe, Moray
 Murphy, Joseph D.
 Murphy, O. R.
 Murphy, Robert E.
 Muszynski, John J.
 Myrland, Arthur L.

 Naber, Henry G.
 Naess, Sigurd E.
 Nagel, Mrs. Frank E.
 Nance, Willis D.
 Naumann, Miss Susan
 Nebel, Herman C.
 Neely, Mrs. Lloyd F.
 Nehls, Arthur L.
 Nellegar, Mrs. Jay C.
 Nelson, Arthur W.
 Nelson, Charles G.
 Nelson, Donald M.
 Nelson, Victor W.
 Neuman, Sidney
 Neumann, Arthur E.
 Newberger, Joseph
 Michael
 Newhall, R. Frank
 Newhouse, Karl H.
 Newman, Mrs. Albert A.
 Newman, Charles H.
 Nichols, J. C.
 Nilsson, Mrs.
 Goodwin M.
 Nishkian, Mrs.
 Vaughn G.
 Nitze, Mrs. William A.
 Noble, Samuel R.
 Nollau, Miss Emma
 Noonan, Edward J.
 Norman, Harold W.
 Norris, Mrs. Lester
 Norton, Christopher D.
 Norton, R. H.
 Novak, Charles J.
 Noyes, A. H.
 Noyes, Allan S.
 Noyes, Mrs. May Wells
 Nufer, Gene

 Nusbaum, Mrs.
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 Olson, Rudolph J.
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 Barnow, David H.
 Baroody, E. T.
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 Barrett, Lawrence H.
 Barriger, John W., III
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 Bartholomay, William, Jr.
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 Bast, O. D.
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 Bauman, P. J.
 Bauman, Walter J.
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 Beach, George R., Jr.
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 Bean, Ferrel M.
 Beatty, Gilbert A.
 Beatty, Ross J., Jr.
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 Beck, Miss Elsa C.
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 Becker, Mrs. George A.
 Becker, Max
 Beelman, Hugh C.
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 Behr, John L.
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 Beiser, Carl H.
 Beman, Lynn W.
 Benedek, Dr. Therese
 Benesch, Alfred
 Bengtson, J. Ludvig
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 Benjamin, Edward
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 Bennett, Dwight W.
 Bennett, Myron M.
 Bennett, R. J.
 Bennett, Russell O.
 Bensinger, Robert F.
 Benson, Martin E.
 Bent, Mrs. Maurice H.
 Bere, Lambert
 Berg, Eugene P.
 Bergen, Mrs. G. L.
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 Bergfors, Emery E.
 Bergman, Edwin A.
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 Bernstein, Saul
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 Beven, T. D.
 Biddle, Robert C.
 Bidwell, Dr. Charles L.
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 Blunt, Carleton
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- Farwell, Albert D.
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Fellowes, H. Folger
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Elisabeth
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Fisher, G. N.
Fisher, Maurice
Fisher, Nathan
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Fiske, Kenneth M.
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Fitzgerald, R. W.
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Charles C., Sr.
Fitzmorris, James
Fitzpatrick, W. J.
Fletcher, Joseph
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Fowler, Clifford C.
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Frank, Marvin
Frank, Raymond W.
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Franz, Herbert G.
Frasier, Richard C.
Freeman, David A.
Freeto, Clarence E.
Fremont, Miss Ruby
Freund, Mrs. I. H.
Friedberg, Dr.
Stanton A.
Friedeman, Richard F.
Friedeman, William S.
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Friedlander, William
Friedlob, Fred M.
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Frisk, Frank O.
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Margaret E.
Frosh, Louis E.
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Naneen R.
Fruchtman, Edward J.
Frye, W. P.
Frystak, A. J.
Fugard, John R.
Fuhry, Joseph G.
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White
Furey, Dr. Warren W.
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Gage, John N.
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Galanti, Mrs. Charles P.
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Gale, M. J.
Gallauer, William
Gallery, Mrs. Daniel J.
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Geraghty, Mrs.
Thomas F.
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Gerrard, J. M.
Gettleman, Samuel R.
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Gianaras, Alec K.
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Gibbs, George M.
Gibson, Paul
Gibson, Truman K., Jr.
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Goodrich, Miss Juliet T.
Goodson, Orr
Gordon, Edward
Gordon, Leonard
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Gordon, Milton
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 Gray, Mrs. Earl E.
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 Greene, Dr. Charles F.
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 Greenlee, William B.
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 Grigsby, William A.
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 Brookes
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 Huggett, W. W.
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 Johanigman, S. E.
 Johnson, A. William
 Johnson, Miss Agnes E.
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 Johnson, Edmund G.
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 McCracken, Kenneth
 McCreery, C. L.
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 McDermott, H. T.
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 Kimball

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 North, Harold F.
 Norton, G. A.
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 Oberfelder, Joseph H.
 Oberhelman, Dr.
 Harry A.
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 O'Brien, Vincent
 O'Brien, Wilbur J.
 Ochsner, Dr. Edward H.
 O'Connor, John J.
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 O'Haire, Harry J.
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 O'Keefe, John F.
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 Olsen, Dr. Charles W.
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 Olsen, Sigurd
 Olson, Albert M.
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 Parker, Miss Edith P.
 Parker, Lee N.
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 Paschal, John William
 Patterson, W. A.
 Patterson, William F.
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 Penner, Samuel
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 Perlman, I. B.
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 Peterson, V. W.
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Potter, Dr. Robert
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 Schnering, Robert B.
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 Shafer, Walter S.
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 Sherman, Robert T.
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 Shuman, John R.
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 Sims, Frank S.
 Sims, Paul K.
 Sims, William W.
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 Singer, William A.
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 Sittler, Edwin C.
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 Sloan, Dr. LeRoy H.
 Sloan, William F.
 Smalley, B. L.
 Smalley, John H.
 Smick, Robert W.
 Smith, H. Kellogg
 Smith, Harold A.
 Smith, John F., Jr.
 Smith, Monroe A., Jr.
 Smith, Robert C.
 Smolka, Oscar J.
 Snideman, Richard L.
 Snite, John T.
 Snow, Lendol D.
 Snyder, Mrs. E. F.
 Sollitt, Mrs. Ralph T.
 Sollitt, Sumner S.
 Somerville, Robert
 Somerville, Mrs.
 William
 Sommers, Bert Edward
 Soule, M. M.
 Spacek, Leonard P.
 Spatta, George
 Speed, Dr. Kellogg
 Spencer, William N.
 Spiegel, Dr. I. Joshua
 Spiegel, Miss
 Katherine J.
 Spiegel, Mrs. Philip
 Spieth, Mrs. Angeline
 Spinka, Dr. Harold M.
 Sponsler, Glen L.
 Spooner, Dr. Bruce A.
 Sporrer, M. J.
 Springer, Clement F.
 Springsuth, Robert C.
 Staffel, Henry E.
 Staffelbach, Earl T.
 Stagman, Dr. Joseph
 Stagman, Nathan
 Stahl, Harold A.
 Stahl, John J.
 Stanbery, J. N.
 Stanley, Donald
 Stannard, F. J.
 Stanton, Edgar, Jr.

ANNUAL MEMBERS (continued)

- Stanton, Mrs. Francis R.
Stanton, Lyman A.
Starbuck, J. C.
Starrett, Miss Carolyn J.
Starshak, A. L.
Staunton, E. C.
Steen, Enoch
Steen, Prof. Julian J.
Steffen, Charles
Steffey, D. Earl
Stein, Mrs. S. Sidney
Steins, Mrs. Halsey
Steinwedell, William
Stensland, T. N.
Stern, David B., Jr.
Stern, Herbert L.
Stern, Herbert L., Jr.
Stern, Jacob S.
Sternberg, Edward
Steuer, Mrs. Joseph True
Stevens, Mrs. Clement D.
Stevens, Mrs.
R. St. John
Stevens, Martin D.
Stewart, George W.
Stickler, Harold I.
Stiles, J. F., Jr.
Stipp, John E.
Stirn, Henry C.
Stockton, Joseph D.
Stoddard, Robert M.
Stoker, Nelson D.
Stolle, Arthur E.
Stolp, John A.
Stolz, Leon
Stone, Dr. F. Lee
Stone, Herbert Stuart, Jr.
Stone, Mrs. J. S.
Storey, Oliver W.
Storkan, Mrs. James
Stormont, Dr. D. L.
Stout, Frederick E.
Straka, Frank B.
Strassheim, Fred W.
Stratton, Paul
Stratton, Robert C.
Straus, Mrs. Robert E.
Stresenreuter, Mrs.
Charles H.
Strohmeier, Dr. Otto E.
Stuart, Lyman J.
Stuart, Robert K.
Stuart, William M.
Stumes, Charles B.
Sudler, Carroll H., Jr.
Sullivan, J. E.
Sutherland, William W.
Suyker, Hector
Swain, David F.
Swanson, Mrs. W. E.
Sweet, Lisle W.
Swidler, Louis
- Swift, T. Philip
Sylvester, Edmund Q.
Symonds, Merrill
Szujewski, Dr. Henry A.
Szymanski, Dr.
Frederick J.
- Taendler, Henry A.
Talbot, Mrs. Eugene S.
Tannenbaum, Dr.
Karl H.
Tarnopol, Emil
Tarrson, Albert J.
Tartak, Mrs. Gertrude C.
Tatge, Paul W.
Tauber, Stewart
Taylor, Mrs. A. Thomas
Taylor, Edward L.
Taylor, Fitzhugh
Taylor, George H.
Taylor, Orville
Taylor, Mrs. Samuel G.
Teichen, E. H.
Templeton, Kenneth S.
Temps, Leupold
Teninga, Alfred J.
Tenney, Henry F.
Terhune, Miss Virginia
Testin, Dr. Henry S.
Teter, Park
Theis, Dr. Frank V.
Thiele, George C.
Thillens, Melvin
Thomas, G. Truman
Thomas, Miss Martha
Thompson, A. M.
Thompson, Mrs.
Florence S.
Thompson, H. Hoyt
Thompson, Dr. John R.
Thompson, K. I.
Thompson, Dr.
Willard O.
Thoren, Mrs. J. N.
Thoresen, H. B.
Thornburn, John M.
Thorne, Frank H.
Thorson, Reuben
Throop, Mrs. George
Enos
Tice, Winfield
Timmings, G. H.
Tippens, Mrs. Albert H.
Tipple, F. A.
Tonk, Percy A.
Toomin, Philip R.
Topaz, Martin
Topolinski, J. J.
Toussaint, S. E.
Trager, D. C.
Trainor, H. J.
Traut, Bernard H.
- Traver, George W.
Traynor, William
Knowlton
Trefeisen, Gustave
Tregenza, A. E.
Trimarco, Ralph R.
Troeger, Louis P.
Trumbull, William M.
Turner, Dr. Herbert A.
Turney, Russell J.
Tuteur, Charles
Tuteur, Irving M.
Tyler, Thomas S.
Tyrrell, Miss Frances
- Ughetti, John B.
Uhlmann, Richard F.
Ullmann, S. E.
Ultsch, W. Lewis
Urban, Andrew
Urban, Dr. H. J.
Uteley, Mrs. Clifton M.
- VanBuskirk, M. G.
Vanderkloot, Dr. Albert
VanderKloot, Nicholas J.
Vanderwicken, Edwin P.
VanDeventer, William E.
VanKampen, A. H.
VanMell, Herman T.
VanNatta, V. R.
VanNice, Errett
VanSchaick, Mrs.
Ethel R.
Varty, Leo G.
Vastine, Lee B.
Vaughan, Alan W.
Velvel, Charles
Vilsoet, William
Vinnedge, Albert S.
Vloedman, Dr. D. A.
Vogel, James B.
Vogt, Earle E.
Voltz, D. H.
VonGehr, George
VonHenke, Mrs.
Edmund J.
Vydra, Frank C.
- Wach, Dr. Edward C.
Wachter, Frederick J.
Wade, Albert G., II
Wadler, Milton Arnold
Wagner, Clarence P.
Wagner, Mrs. David H.
Wagner, Richard
Wahl, Herman L.
Waite, Roy E.
Waldeck, Herman
Waldman, Dr. Albert G.
Walgren, Lawrence C.
Walker, Dr. Alfred O.

ANNUAL MEMBERS (continued)

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|-----------------------------|----------------------------|-----------------------------|
| Walker, Frederick W., Jr. | Weitzel, Mrs. Tony | Winterbotham, John R. |
| Walker, Reno R. | Welfeld, Marvin J. | Wiseman, William P. |
| Walker, Wendell | Wells, Sidney | Wisner, C. V., Jr. |
| Walker, Mrs. William Ernest | Wenholz, Walter W. | Wolchina, R. P. |
| Wall, Dr. Frank J. | Wenninger, William C. | Wolf, Morris E. |
| Wallenstein, Sidney | Wescott, Dr. Virgil | Wolf, Orrin E. |
| Waller, William, Jr. | Wesley, C. N. | Wolfe, Hubert J. |
| Wallerstein, David B. | West, James D. | Wolff, Frank C. |
| Wallgren, Eric M. | Westbrook, Charles H. | Wolff, Oscar M. |
| Walters, Gary G. | Western, North | Wood, Edward W. |
| Waltman, C. E. | Wetherell, Warren | Wood, William A. |
| Walz, John W. | Wetmore, Horace O. | Woodside, John T. |
| Wanger, David E., Jr. | Wetten, Walton | Woodson, William T. |
| Wardwell, H. F. | Wheeler, Mrs. Seymour | Woodyatt, Dr. Rollin Turner |
| Ware, Mrs. Robert R. | Wheelock, Miss Ellen P. | Woolard, Francis C. |
| Ware, Mrs. Thomas M. | Whipple, Gaylord C. | Woulfe, Henry F. |
| Ware, Willis C. | Whipple, Miss Velma D. | Wright, William Ryer |
| Warner, Ernest N. | Whiston, Frank M. | Wrisley, George A. |
| Warner, Mason | White, Philip M. | Wyatt, Harry N. |
| Warton, Frank R. | Whitlock, John B. | Wybel, L. E. |
| Washburn, Dr. Kenneth C. | Whitfield, George B. | Wyckoff, Dr. Philip H. |
| Wasserman, Hy | Whitmore, Lyle S. | |
| Wasson, Theron | Whitnell, William W. | Yarnall, Frank H. |
| Waters, Gerard E. | Whitney, Mrs. Charles R. | Yates, John E. |
| Waterstreet, W. Neal | Wible, R. R. | Yates, Schuyler |
| Watkins, George H. | Wickersham, Mrs. Lucille | Yavitz, Sidney M. |
| Watling, John | Wickman, C. E. | Yaworski, A. F. |
| Watson, Norman E. | Wilber, Allen S. | Yohe, C. Lloyd |
| Watt, Herbert J. | Wilbur, Lawrence S. | Yonkers, Edward H. |
| Watt, Howard D. | Wilby, A. C. | Youker, Mrs. Claude W. |
| Watt, Richard F. | Wilds, John L. | Young, C. S. |
| Webb, Dr. Edward F. | Wilhite, James A. | Young, Dr. Donald R. |
| Webber, Harold H. | Wilkinson, William D. | Young, J. L. |
| Weber, James E. | Willard, Nelson W. | Youngberg, Arthur C. |
| Webster, Dr. Augusta | Williams, Albert W. | Youngren, W. W. |
| Webster, Frederick F. | Williams, Jay C. | |
| Webster, N. C. | Williams, Lawrence | Zaczek, Miss Genevieve A. |
| Wehmeier, H. A. | Williams, Robert G. | Zadek, Milton |
| Weichselbaum, Dr. Paul K. | Willis, Ivan L. | Zaring, Paul B. |
| Weick, George T. | Willott, Mrs. Adele | Zatz, Sidney R. |
| Weidert, William C. | Willy, Gustave J. | Zelinko, George J. |
| Weigle, Mrs. Maurice | Wilson, Allen B. | Zimmer, Harry L. |
| Weil, Alfred J. | Wilson, Arlen J. | Zimmerman, Austin M. |
| Weil, Mrs. Carl H. | Wilson, Percival C. | Zimmerman, Carl |
| Weiner, Charles | Wilson, Dr. William | Zimmerman, E. W. |
| Weinress, S. J. | Windchy, Mrs. Frederick O. | Zimmerman, Dr. Harold W. |
| Weisbrod, Maxfield | Winsberg, Herbert H. | Zimmerman, Preston |
| Weismantel, Miss Theresa A. | Winsberg, Samuel | Zimmermann, Mrs. P. T. |
| Weiss, Alexander | Winston, Mrs. Farwell | Zipse, Edwin W. |
| Weitman, W. E. | | Zitzewitz, Arthur F. |
| Weitzel, Carl J. | | Zolla, Abner M. |

DECEASED, 1952

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|-----------------------|----------------------|--------------------------|
| Abbott, Mrs. John Jay | Beck, Frederick | Blitzsten, Dr. N. Lionel |
| Alger, Frederick W. | Bernstein, George E. | Bond, William Scott |

ANNUAL MEMBERS *(continued)*

Carter, C. B.	Johnson, Dr. G. Erman	Reiser, Miss Irene K.
Clow, Kent S.	Kipp, Lester E.	Robson, Mrs. Oscar
Dougherty, Edward A.	Kuehn, Oswald L.	Scalbom, Oscar L.
Follett, C. W.	Lehman, O. W.	Sillani, Mrs. Mabel W.
Frankenstein, Rudolph	Leibrandt, George F.	Smart, David A.
Goldthorp, Dr. Ellsworth	Manzelmann, George F.	Stewart, George R.
Haskell, Clinton H.	Marnane, James D.	Trumbull, Mrs. Charles L.
Hennemeyer, Dr.	McLaughlin, Dr.	Trumbull, Robert F.
Rudolph J.	James H.	Way, Mrs. Henry J.
Hoag, Mrs. Junius C.	Oleson, Philip H.	Wilmarth, Donald G.
		Woodward, Arthur H.

Articles of Incorporation

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer

Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaas, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
 COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,
 NOTARY PUBLIC, COOK COUNTY, ILL.

[SEAL]

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 15th day of November, 1943, the name of FIELD MUSEUM OF NATURAL HISTORY was changed to CHICAGO NATURAL HISTORY MUSEUM. A certificate to this effect was filed November 23, 1943, in the office of the Secretary of State for Illinois.

Amended By-Laws

DECEMBER, 1945

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board,

become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the Member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures and entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change

of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants, signed by such officer, or officers, or other persons as the Board of Trustees may from time to time designate.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of the Chicago Natural History Museum, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of the Chicago Natural History Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology—each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of not less than five or more than seven members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to make and alter investments from time to time, reporting its actions to the Board of Trustees. The Finance Committee is fully authorized to cause any funds or investments of the Corporation to be made payable to bearer, and it is further authorized to cause real estate of the Corporation, its funds and investments, to be held or registered in the name of a nominee selected by it.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. The By-Laws, and likewise the Articles of Incorporation, may be amended at any regular meeting of the Board of Trustees by a vote in favor thereof of not less than two-thirds of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.











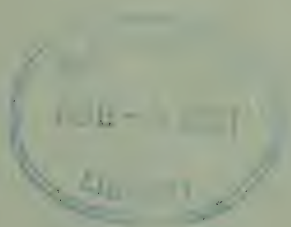


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ANNUAL REPORT

1953



Chicago Natural History Museum









WALTHER BUCHEN

Member of the Board of Trustees since 1952
Donor and Leader of the Buchen East Africa Zoological Expedition

CHICAGO NATURAL HISTORY MUSEUM

Report of the Director

to the

Board of Trustees

for the year 1953



CHICAGO, ILLINOIS

1954

PRINTED IN THE UNITED STATES OF AMERICA
BY CHICAGO NATURAL HISTORY MUSEUM PRESS

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"THE LAST TO LEAVE"

Photograph by Delbert E. Philpott

Eighth Chicago International Exhibition of Nature Photography, 1953



Former Officers

PRESIDENTS	EDWARD E. AYER* 1894-1898
	HARLOW N. HIGINBOTHAM* 1898-1908
FIRST VICE-PRESIDENTS	MARTIN A. RYERSON* 1894-1932
	ALBERT A. SPRAGUE* 1933-1946
SECOND VICE-PRESIDENTS	NORMAN B. REAM* 1894-1902
	MARSHALL FIELD, JR.* 1902-1905
	STANLEY FIELD 1906-1908
	WATSON F. BLAIR* 1909-1928
	ALBERT A. SPRAGUE* 1929-1932
	JAMES SIMPSON* 1933-1939
	SILAS H. STRAWN* 1940-1946
	ALBERT B. DICK, JR. 1946-1951
THIRD VICE-PRESIDENTS	ALBERT A. SPRAGUE* 1921-1928
	JAMES SIMPSON* 1929-1932
	ALBERT W. HARRIS 1933-1941
SECRETARIES	RALPH METCALF 1894
	GEORGE MANIERRE* 1894-1907
	FREDERICK J. V. SKIFF* 1907-1921
	D. C. DAVIES* 1921-1928
	STEPHEN C. SIMMS* 1928-1937
TREASURERS	BYRON L. SMITH* 1894-1914
DIRECTORS	FREDERICK J. V. SKIFF* 1893-1921
	D. C. DAVIES* 1921-1928
	STEPHEN C. SIMMS* 1928-1937

* Deceased

Former Members of the

Board of Trustees

GEORGE E. ADAMS,* 1893-1917

OWEN F. ALDIS,* 1893-1898

ALLISON V. ARMOUR,* 1893-1894

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BOARDMAN CONOVER,* 1940-1950

RICHARD T. CRANE, JR.,* 1908-1912
1921-1931

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JAMES W. ELLSWORTH,* 1893-1894

CHARLES B. FARWELL,* 1893-1894

HOWARD W. FENTON, 1941-1951

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MARSHALL FIELD, JR.,* 1899-1905

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1918-1921

ALBERT W. HARRIS, 1920-1941

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HUNTINGTON W. JACKSON,* 1894-1900

ARTHUR B. JONES,* 1894-1927

CHAUNCEY KEEP,* 1915-1929

WILLIAM V. KELLEY,* 1929-1932

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CHARLES H. MARKHAM,* 1924-1930

CYRUS H. MCCORMICK,* 1894-1936

CHARLES A. MCCULLOCH,* 1936-1945

JOHN BARTON PAYNE,* 1910-1911

GEORGE F. PORTER,* 1907-1916

FREDERICK H. RAWSON,* 1927-1935

NORMAN B. REAM,* 1894-1910

JOHN A. ROCHE,* 1893-1894

THEODORE ROOSEVELT,* 1938-1944

MARTIN A. RYERSON,* 1893-1932

FRED W. SARGENT,* 1929-1939

STEPHEN C. SIMMS,* 1928-1937

JAMES SIMPSON,* 1920-1939

FREDERICK J. V. SKIFF,* 1902-1921

ALBERT A. SPRAGUE,* 1910-1946

SILAS H. STRAWN,* 1924-1946

EDWIN WALKER,* 1893-1910

ALBERT H. WETTEN,* 1939-1953

LESLIE WHEELER,* 1934-1937

NORMAN WILLIAMS,* 1894-1899

WILLIAM WRIGLEY, JR.,* 1919-1931

* Deceased

Officers, Trustees, and Committees, 1953

OFFICERS

STANLEY FIELD, *President*
 MARSHALL FIELD, *First Vice-President*
 HENRY P. ISHAM, *Second Vice-President*
 SAMUEL INSULL, JR., *Third Vice-President*
 SOLOMON A. SMITH, *Treasurer*
 CLIFFORD C. GREGG, *Secretary*
 JOHN R. MILLAR, *Assistant Secretary*

BOARD OF TRUSTEES

LESTER ARMOUR	HENRY P. ISHAM
SEWELL L. AVERY	HUGHSTON M. MCBAIN
WM. MCCORMICK BLAIR	WILLIAM H. MITCHELL
WALTHER BUCHEN	JOHN T. PIRIE, JR.
WALTER J. CUMMINGS	CLARENCE B. RANDALL
ALBERT B. DICK, JR.	GEORGE A. RICHARDSON
JOSEPH N. FIELD	JOHN G. SEARLE
MARSHALL FIELD	SOLOMON A. SMITH
MARSHALL FIELD, JR.	LOUIS WARE
STANLEY FIELD	ALBERT H. WETTEN*
SAMUEL INSULL, JR.	JOHN P. WILSON

COMMITTEES

Executive—Stanley Field, Solomon A. Smith, Albert H. Wetten,* Wm. McCormick Blair, Samuel Insull, Jr., Marshall Field, John P. Wilson, Albert B. Dick, Jr., Henry P. Isham

Finance—Solomon A. Smith, Albert B. Dick, Jr., John P. Wilson, Walter J. Cummings, Albert H. Wetten,* Henry P. Isham, Wm. McCormick Blair

Building—Albert H. Wetten,* William H. Mitchell, Lester Armour, Joseph N. Field

Auditing—Wm. McCormick Blair, Clarence B. Randall, Marshall Field, Jr., Louis Ware

Pension—Samuel Insull, Jr., Sewell L. Avery, Hughston M. McBain, John G. Searle

* Deceased, 1953

List of Staff, 1953

DIRECTOR

CLIFFORD C. GREGG
JOHN R. MILLAR, *Deputy Director*
E. LELAND WEBBER, *Executive Assistant*

DEPARTMENT OF ANTHROPOLOGY

PAUL S. MARTIN, *Chief Curator*
FAY-COOPER COLE, *Research Associate, Malaysian
Ethnology*
DONALD COLLIER, *Curator, South American Archaeology
and Ethnology*
J. ERIC THOMPSON, *Research Associate, Central American
Archaeology*
A. L. KROEBER, *Research Associate, American Archaeology*
JOHN B. RINALDO, *Assistant Curator, Archaeology*
ELAINE BLUHM, *Assistant, Archaeology*
ROBERT J. BRAIDWOOD, *Research Associate, Old World
Prehistory*
MIGUEL COVARRUBIAS, *Research Associate, Primitive Art*
M. KENNETH STARR, *Curator, Asiatic Archaeology and
Ethnology*
GEORGE I. QUIMBY, *Curator of Exhibits*
ALFRED LEE ROWELL, *Dioramist*
GUSTAF DALSTROM, *Artist*
JOHN PLETINCKX, *Ceramic Restorer*
WALTER C. REESE, *Preparator*
AGNES H. McNARY, *Departmental Secretary*

DEPARTMENT OF BOTANY

THEODOR JUST, *Chief Curator*
B. E. DAHLGREN, *Curator Emeritus*
PAUL C. STANDLEY, *Curator Emeritus, Phanerogamic
Herbarium*
JULIAN A. STEYERMARK, *Curator, Phanerogamic
Herbarium*
J. FRANCIS MACBRIDE, *Curator, Peruvian Botany*
EARL E. SHERFF, *Research Associate, Systematic Botany*
FRANCIS DROUET, *Curator, Cryptogamic Herbarium*
HANFORD TIFFANY, *Research Associate, Cryptogamic
Botany*
DONALD RICHARDS, *Research Associate, Cryptogamic
Botany*
E. P. KILLIP, *Research Associate, Phanerogamic Botany*
JOHN W. THERET, *Assistant Curator, Economic Botany*
LLEWELYN WILLIAMS,* *Associate, Forest Products*
ARCHIE F. WILSON, *Associate, Wood Anatomy*

* resigned

DEPARTMENT
OF
BOTANY
(continued)

J. S. DASTON, *Assistant, Botany*
EMIL SELLA, *Curator of Exhibits*
SAMUEL H. GROVE, JR., *Artist-Preparator*
FRANK BORYCA, *Technician*
MATHIAS DONES, † *Preparator*
WALTER HUEBNER, *Preparator*
VIRGINIA SHARP, * *Departmental Secretary*
M. DIANNE MAURER, *Departmental Secretary*

DEPARTMENT
OF
GEOLOGY

SHARAT K. ROY, *Chief Curator*
BRYAN PATTERSON, *Curator, Fossil Mammals*
RAINER ZANGERL, *Curator, Fossil Reptiles*
ROBERT H. DENISON, *Curator, Fossil Fishes*
ALBERT A. DAHLBERG, *Research Associate, Fossil
Vertebrates*
EVERETT C. OLSON, *Research Associate, Fossil Vertebrates*
PRISCILLA F. TURNBULL, *Assistant, Fossil Vertebrates*
EUGENE S. RICHARDSON, JR., *Curator, Fossil Invertebrates*
GEORGE LANGFORD, *Curator, Fossil Plants*
R. H. WHITFIELD, *Associate, Fossil Plants*
VIOLET S. WHITFIELD, *Associate, Fossil Plants*
ERNST ANTEVS, *Research Associate, Glacial Geology*
ROBERT K. WYANT, *Curator, Economic Geology*
HARRY E. CHANGNON, *Curator of Exhibits*
ORVILLE L. GILPIN, *Chief Preparator, Fossils*
HENRY HORBACK, *Preparator*
WILLIAM D. TURNBULL, *Preparator*
STANLEY KUCZEK, *Preparator*
HENRY U. TAYLOR, *Preparator*
MAIDI WIEBE, *Artist*
MARY SUE HOPKINS, *Departmental Secretary*

DEPARTMENT
OF
ZOOLOGY

KARL P. SCHMIDT, *Chief Curator*
COLIN CAMPBELL SANBORN, *Curator, Mammals*
PHILIP HERSHKOVITZ, *Assistant Curator, Mammals*
LUIS DE LA TORRE, *Associate, Mammals*
AUSTIN L. RAND, *Curator, Birds*
EMMET R. BLAKE, *Associate Curator, Birds*
RUDYERD BOULTON, *Research Associate, Birds*
MELVIN A. TRAYLOR, JR., *Research Associate, Birds*

† retired

* resigned

DEPARTMENT
OF
ZOOLOGY
(continued)

ELLEN T. SMITH, *Associate, Birds*
 CLIFFORD H. POPE, *Curator, Amphibians and Reptiles*
 CH'ENG-CHAO LIU, *Research Associate, Reptiles*
 HYMEN MARX, *Assistant, Reptiles*
 LOREN P. WOODS, *Curator, Fishes*
 ROBERT F. INGER, *Assistant Curator, Fishes*
 MARION GREY, *Associate, Fishes*
 WILLIAM J. GERHARD, *Curator Emeritus, Insects*
 RUPERT L. WENZEL, *Curator, Insects*
 HENRY S. DYBAS, *Associate Curator, Insects*
 ALFRED E. EMERSON, *Research Associate, Insects*
 GREGORIO BONDAR, *Research Associate, Insects*
 CHARLES H. SEEVERS, *Research Associate, Insects*
 ROBERT TRAUB, *Research Associate, Insects*
 ALEX K. WYATT, *Research Associate, Insects*
 LILLIAN A. ROSS, *Associate, Insects*
 AUGUST ZIEMER, *Assistant, Insects*
 RUTH MARSHALL, *Research Associate, Arachnids*
 FRITZ HAAS, *Curator, Lower Invertebrates*
 D. DWIGHT DAVIS, *Curator, Vertebrate Anatomy*
 DOROTHY B. FOSS,* *Osteologist*
 R. M. STRONG, *Research Associate, Anatomy*
 WALDEMAR MEISTER, *Associate, Anatomy*
 LAURA BRODIE, *Assistant*
 HARRY HOOGSTRAAL, *Field Associate*
 DIOSCORO S. RABOR, *Field Associate*
 LEON L. WALTERS, *Taxidermist*
 FRANK C. WONDER, *Taxidermist*
 RONALD J. LAMBERT, *Taxidermist*
 CARL W. COTTON, *Taxidermist*
 CELESTINO KALINOWSKI, *Assistant Taxidermist*
 DOMINICK VILLA, *Tanner*
 JOSEPH B. KRSTOLICH, *Artist*
 MARGARET G. BRADBURY, *Artist*
 MARGARET J. BAUER, *Departmental Secretary*

ASSOCIATE
EDITORS

LILLIAN A. ROSS, *Scientific Publications*
 MARTHA H. MULLEN, *Assistant*
 HELEN ATKINSON MACMINN, *Miscellaneous Publications*

DEPARTMENT OF
THE N. W. HARRIS
PUBLIC SCHOOL
EXTENSION

RICHARD A. MARTIN, *Curator*
 ALBERT J. FRANZEN, *Preparator and Taxidermist*
 BERTHA M. PARKER, *Research Associate*

* resigned

JAMES NELSON
AND
ANNA LOUISE
RAYMOND
FOUNDATION

MIRIAM WOOD, *Chief*
MARIE SVOBODA
HARRIET SMITH
JANE MONSON*
NANCY WORSHAM
EDITH FLEMING
DOLLA COX
JEAN SHULTZ

THE LAYMAN
LECTURER

PAUL G. DALLWIG

THE LIBRARY

Administration:

META P. HOWELL, *Librarian*
LOUISE BOYNTON DENISON,* *Administrative Assistant*
NANCY R. PETERS, *Assistant to the Librarian*

Classification and Cataloguing:

DAWN DAVEY
M. EILEEN ROCOURT

Reference:

JANE F. ROSS
AUDREY GREELEY RHINE

Accessions, Bindery, Stacks:

BORIS IVANOV
GEORGE STOSIUS

ACCOUNTING

WILLIAM A. BENDER,* *Auditor*
A. L. STEBBINS, *Auditor*
MARION K. HOFFMANN, *Bookkeeper*
ROBERT E. BRUCE, *Purchasing Agent*

BOOK SHOP

JESSIE DUDLEY, *in charge*

ADMINISTRATION
AND RECORDS

SUSAN M. CARPENTER, *Secretary to the Director*
MARION G. GORDON, *Registrar*
LORRAINE ANDERSON, *Assistant Registrar*
FOREST HIGHLAND, *Assistant Recorder*
HILDA NORDLAND, *Assistant Recorder*
JEANNETTE FORSTER, *Assistant Recorder*

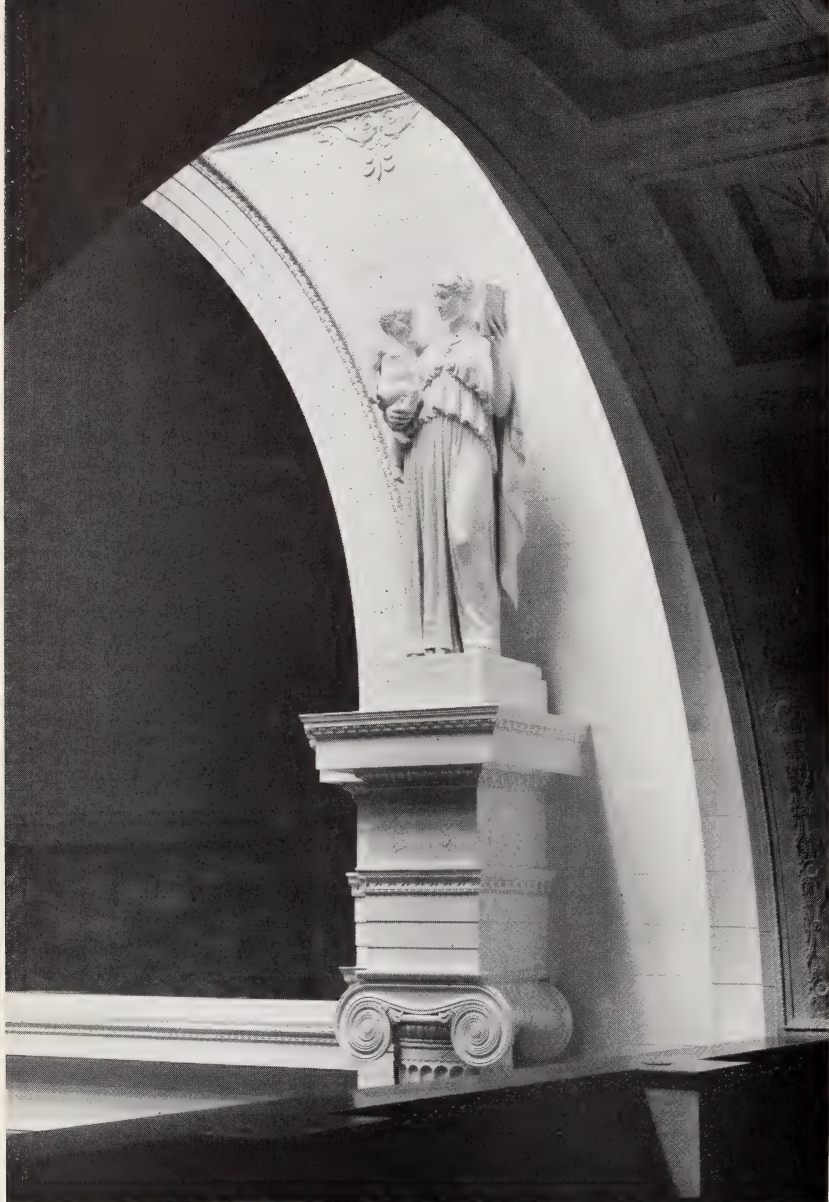
* resigned

PUBLIC RELATIONS COUNSEL	H. B. HARTE CHRISTINE TARDY,* <i>Associate</i> BARBARA POLIKOFF, <i>Assistant</i>
DIVISION OF MEMBERSHIPS	PEARLE BILINSKE, <i>in charge</i>
DIVISIONS OF PHOTOGRAPHY AND ILLUSTRATION	JOHN BAYALIS, <i>Photographer</i> HOMER V. HOLDREN, <i>Assistant</i> CLARENCE B. MITCHELL, <i>Research Associate</i> DOUGLAS E. TIBBITTS, <i>Illustrator</i>
DIVISION OF MOTION PICTURES	JOHN W. MOYER,† <i>in charge</i>
DIVISION OF PRINTING	RAYMOND H. HALLSTEIN, <i>in charge</i> HAROLD M. GRUTZMACHER, <i>Assistant</i>
MAINTENANCE	JAMES R. SHOUBA, <i>Superintendent</i> GUSTAV A. NOREN, <i>Assistant Superintendent</i>
ENGINEERING	WILLIAM E. LAKE, <i>Chief Engineer</i> LEONARD CARRION, <i>Assistant Chief Engineer</i>
THE GUARD	GEORGE WOODWARD,† <i>Captain</i> DAVID DUNSMUIR, <i>Captain</i>

* resigned

‡ on leave

† retired



"DISSEMINATION OF KNOWLEDGE," SCULPTURE BY HENRY HERING

CHICAGO NATURAL HISTORY MUSEUM
FORMERLY FIELD MUSEUM OF NATURAL HISTORY
ROOSEVELT ROAD AND LAKE SHORE DRIVE

Annual Report

of the Director

To the Trustees:

I have the honor to present a report of the operation of the Museum for the year ending December 31, 1953.

Throughout the year the problem of financial support was uppermost in the minds of the Trustees and the administration of the Museum. A special committee, consisting of Hughston M. McBain, chairman, Marshall Field, Jr., Henry P. Isham, and John G. Searle, was appointed early in the year, and this committee, in co-operation with President Stanley Field, assembled necessary data and prepared plans that now promise a brighter financial future for this institution.

Studies by the committee clearly established the fact that every reasonable effort had been made toward financing through private sources. In the ten years from 1943 to 1952, income from endowments had increased from \$213,250 to \$753,836. During the same time, support from tax funds had increased only from \$121,642 to \$128,478. It was immediately apparent that, while benefits to the public had greatly increased during the ten-year period, support by the public had not. The Board of Trustees was naturally reluctant to look to taxation for increased support, but, in view of the facts established, this appeared to be the proper approach toward solvency. An approach was made to the Chicago Park District Commissioners by all the museums that, under the authority of state law, are entitled to share in the museums' tax levied by the Park District.

As a result, the Park District Commissioners, after careful study and a public hearing that brought no dissenting opinion, voted an increase in the tax levy, which, although far below the amount authorized by the state legislature, will add approximately \$52,000 per year to the Museum's income beginning in 1955. It is desired to record here the thanks and appreciation of the Museum to the members of the Park District Board for their action in granting necessary relief while at the same time maintaining every effort to keep the taxation at the lowest possible level. Meanwhile, rigid economies in the operation of the Museum permitted some readjustment in compensation to employees late in the year.

ATTENDANCE

Total attendance recorded at the Museum during the year was 1,204,855, a figure somewhat less than for the period a year ago but still impressive and within the range of normal attendance fluctuation. Of this group, only 132,198 people (slightly less than 11 per cent) paid the regular admission fee of 25 cents and 1,072,657 visited the Museum without charge, either coming on free days or being members of those groups that are admitted without charge at all times (see page 87 for comparative attendance statistics). It is essential, of course, that an educational institution of this type be available to all persons, regardless of their ability to pay. The work of the James Nelson and Anna Louise Raymond Foundation for Public School and Children's Lectures (see page 25) continued as in former years to be a great drawing-card for the school children not only of Chicago but also of cities and rural communities in several surrounding states. May is the peak month of school-group attendance, although April and November were higher in 1953 than in previous years. As usual, the Museum entertained the boys and girls who attended the National Congress of 4-H Clubs held in Chicago early in December. I am especially happy to report that the 4-H Donor Merit Award was presented to the Museum by G. L. Noble, Director, and Kenneth Anderson, of the National Committee on Boys and Girls Club Work, through the National 4-H Club Congress. It is anticipated that the co-operation between the 4-H Club movement and the Museum will continue as long as these two organizations exist. Local organizations that used the Museum for their meeting place during the year included the Nature Camera Club of Chicago, Kennicott Club, and Illinois Audubon Society, which also holds its series of public lectures here.

MEMBERSHIP

In recognition of his eminent service to science, Professor H. O. Beyer, of Manila, who has won international acclaim as the outstanding authority on the ethnology and archaeology of the Philippine Islands, was elected an Honorary Member of the Museum by the Board of Trustees. This is an honor that has been accorded only to eight other persons in the history of the Museum (for names of Honorary Members see page 100). The total number of Members of the Museum at the close of the year was 4,800. The number in each membership classification was as follows: *Benefactors*—25; *Honorary Members*—9; *Patrons*—15; *Corresponding Members*—6; *Contributors*—186; *Corporate Members*—38; *Life Members*—146; *Non-Resident Life Members*—23; *Associate Members*—2,174; *Non-Resident Associate Members*—12; *Sustaining Members*—12; *Annual Members*—2,154. The Museum thanks its loyal Members for their public-spirited support of its scientific and educational work. Names of all Members of the Museum during 1953 are listed at the end of this Report under the various kinds of memberships that are offered by the Museum (see above).

MEMBERS' NIGHT

The third annual Members' Night was held at the Museum on Monday evening, October 5. The featured exhibit was the display of thirty-two magnificent colored folio prints of flowers published between 1798 and 1807 in London by the noted English physician and botanist, Robert J. Thornton. This collection, known as *The Temple of Flora*, is the most famous of all florilegia. The collection was lent to the Museum by one of its Members, Walter S. Ross, of Chicago. I desire here to record our sincere appreciation to him not only for the loan of the collection but also for his assistance in meeting costs of exhibition. A second feature was an exhibit arranged by the Library of the Museum and the Department of Botany showing botanical illustration from its inception to the present time. The Museum is indeed fortunate to have in its own Library the volumes necessary to produce such an exhibit. This year no special entertainment was provided, so that Members could make the most of their opportunity to visit the scientific departments, laboratories, and workrooms of the Museum, which are not open at other times. Members of the staff were present to explain the work of the different departments.



ALBERT H. WETTEN

1869-1953

Member of the Board of Trustees since 1939
Chairman of the Building Committee
Member of the Executive Committee and Finance Committee

TRUSTEES AND OFFICERS

It is with sincere personal regret that I record the death of Albert H. Wetten, a member of the Board of Trustees since 1939. As chairman of the Building Committee he had been extremely helpful to me on every occasion when I found it necessary to seek his aid. His fellow members of the Board of Trustees adopted the following resolution at the October meeting:

"The Board of Trustees of Chicago Natural History Museum wishes to express on behalf of its members their deep affection and admiration for Mr. Albert H. Wetten who died suddenly on September 3, 1953, after an eminently successful business career of sixty-five years.

"Mr. Wetten became an Associate Member of the Museum in 1926 and in 1939 was elected a member of the Board of Trustees. In 1948 he was elected a Contributor. He served as a member of the Building Committee, the Finance Committee, and the Executive Committee, in each of which he served with distinction.

"His interest in the work of the Museum was evidenced by his generous gift that made possible the inclusion of color plates in the Museum publication by Dr. Ch'eng-chao Liu, *Amphibians of Western China*, and it was characteristic of his devotion to the purposes of the Museum that he should have remembered it with a generous gift in his will.

"He had a long and varied experience in real estate and finance upon which he drew to the great advantage of the Museum in helping it deal with its many financial and investment problems, and in addition he gave freely of his time and counsel to other educational, cultural, and charitable institutions, among which were The Newberry Library, The Children's Memorial Hospital, and St. Luke's Hospital.

"The loss of his inspiration and counsel will be keenly felt by his associates in the Museum.

"Therefore, be it resolved that this memorial be recorded in the minutes of this meeting and that the Secretary send a copy to Mrs. T. Lloyd Kelly and to Mrs. James S. Pennington."

For the forty-fifth consecutive time Stanley Field was elected president of the Board of Trustees and all officers of the Board were re-elected with him at the annual meeting in January. The officers are: Marshall Field, first vice-president; Henry P. Isham, second vice-president; Samuel Insull, Jr., third vice-president; Solomon A. Smith, treasurer; Clifford C. Gregg, secretary; and

John R. Millar, assistant secretary. John T. Pirie, Jr., who was elected in December to fill the vacancy on the Board of Trustees caused by the death of Albert H. Wetten, was simultaneously elected a Corporate Member of the Museum.

Clarence B. Randall, Trustee, and Clifford C. Gregg, Director, each were honored by a Freedoms Foundation Award for 1952, announcement of which was made on February 22, 1953, by Freedoms Foundation. The award to Mr. Randall was made in recognition of the excellence of his article, "Free Enterprise Is Not a Hunting License," printed in the *Atlantic Monthly*, and the award to Colonel Gregg was made in recognition of the merit of an address, "Renewing Our Faith in Freedom," that he gave before the Young Men's Christian Association of Springfield, Illinois, at its annual retreat. (The Freedoms Foundation Award is a citation for effective interpretation of American institutions based on the philosophy of government by free men.)

LECTURE PROGRAMS FOR ADULTS

Again the Museum presented the free Saturday-afternoon lectures that it has offered to the public every year for more than half a century. The lectures are provided by the Edward E. Ayer Lecture Foundation Fund. A total of 16,010 adults attended the lectures, which this year numbered seventeen, and many letters of commendation were received at the Museum. Such letters, either critical or commendatory, are always welcomed as guides to the selection of speakers and subjects for future lectures.

THE LAYMAN LECTURER

The thirteenth series of Sunday-afternoon lectures by our Layman Lecturer, Paul G. Dallwig, was concluded in April. Demands of his business interests prevented him from opening his fourteenth season of lectures in the fall, but plans have been completed for that series to begin in January of 1954. A total of 2,372 people attended his lectures in January, March, and April of 1953. To keep his presentations up to date, Mr. Dallwig is continually revising his lectures to include new scientific information as it becomes available. I am pleased to express to him the sincere thanks of the Museum for his gift of time, energy, and effort in producing his unique series of lectures for Museum audiences.

JAMES NELSON AND ANNA LOUISE RAYMOND
FOUNDATION FOR PUBLIC SCHOOL AND
CHILDREN'S LECTURES

The James Nelson and Anna Louise Raymond Foundation continued with established programs and activities for school children and added new ones as need arose. Established programs included tours for school children according to their interests and according to suggestions in their course of study, special school-programs of illustrated introductions followed by supervised study in designated halls (39 of these programs were given, with 5,297 in attendance), and motion-picture programs on Saturday mornings in March, April, October, and November and also on six Thursday mornings in July and August. Members of the increasing number of summer play-groups and day camps are the greatest part of the summer audiences, and attendance required a second showing of each program. Series of "Museum Stories" (*Desert Life* and *Life in the Polar Regions*) were distributed free to children at the Saturday-morning motion-picture programs. Extension-lecture service in Chicago public schools continues but is decreasing, and the emphasis of all Raymond Foundation activities centers in the Museum where

Special program in the Museum for Chicago public schools consists of illustrated introduction, directed study in selected halls, and general discussion of the results.



the exhibit material is most usable. New types of programs resulted from needs of the organization of Girl Scouts in Chicago. Seven programs, offered as helps in nature-badge work, were given, with a total attendance of 580. On "Monday is Girl-Scout Day in the Museum" in July and August, several exhibits were marked to help the girls find their own answers in their nature-badge work, and a staff member of Raymond Foundation was on hand both morning and afternoon to help the girls. Eight of these programs were given, with a total attendance of 550. Brownie Scouts (girls of 7 through 9 years) needed help too, and so a program was planned for them in October and November after the nine regular Saturday-morning movies. A "game" or "exploration sheet" was selected from several that had been prepared, and then the Brownie leader took her girls to the exhibits to find the answers. A group of Girl Scout Museum Aides helped with these programs, in which a total of 1,019 Brownie Scouts participated. Another group of Girl Scout Museum Aides mounted plants in the Museum Herbarium under the supervision of Miss Olive Doig. Valuable and needed work has been accomplished by these girls, and the Museum is grateful for their help.

A summary of all activities of Raymond Foundation for the year, with attendance figures, follows:

RAYMOND FOUNDATION ACTIVITIES

ACTIVITIES WITHIN THE MUSEUM

For children	Groups	Attendance	Groups	Attendance
Tours in Museum halls	1,119	39,216		
Lectures preceding tours	140	10,111		
Motion-picture programs	30	21,867		
TOTAL			1,288	71,386

For adults

Tours in Museum halls	380	6,990		
TOTAL			380	6,990

EXTENSION ACTIVITIES

Chicago public schools

Elementary schools	44	15,827		
TOTAL			44	15,827

TOTAL FOR RAYMOND FOUNDATION ACTIVITIES			1,712	94,203
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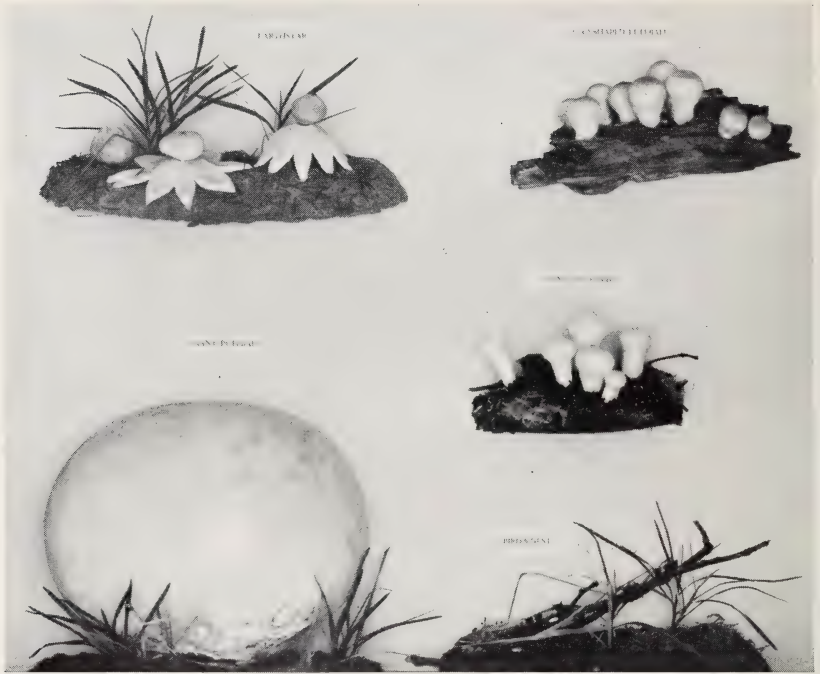
THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

Twenty new exhibits of macroscopic fungi grouped according to mode of spore-production were prepared in the workshops of the Department of the N. W. Harris Public School Extension during the year by Albert J. Franzen, Preparator, and installed in portable cases for use in schools. These exhibits duplicated a set of five prepared in 1950 that had been tested for their effectiveness as visual aids through the co-operation of Research Associate Bertha M. Parker, science teacher at the Laboratory School of the University of Chicago. A habitat exhibit of the red fox was also completed during the year, bringing the total of new exhibits to twenty-one.

The Harris Extension prepares and maintains museum exhibits mounted in standard portable cases to be used in classrooms to supplement the teaching of science and social studies in the schools of Chicago. Two trucks operated by the department take the exhibits to schools according to a planned system of regular rotation during the school months whereby every two weeks each school receives on loan two exhibits that are exchanged two weeks later. Seventeen exchanges are made during the school year, and the order of circulation to elementary schools is so planned that no school receives the same exhibits twice during the eight years any one child is in attendance. Circulation during the year of portable exhibits functioned normally according to established procedure.

Because of the growing importance of science in the school curriculum and the well-known meagerness of equipment for science-teaching in elementary schools, we have recognized more fully our part in fostering in the school children of Chicago greater understanding of natural history. We have tried, therefore, to prepare exhibits that would be meaningful to the city child and have made every effort to keep the exhibits in repair. During the year workshop repairs were necessary on 384 of the 1,000-odd exhibit cases circulated by the department. Most of these repairs were made during the months when circulation was halted for summer vacation and the drivers were in the Museum. At this time, too, the rack room in the Museum was rearranged to permit orderly filing of the newer exhibits.

In the past, circulation of exhibits has been extended to private and denominational schools as well as to public schools and to public-service institutions that have demonstrated a need for the exhibit material. But because of the mounting school-population and the consequent establishment of new public schools in Chicago, we have found it necessary to establish rather rigid controls regarding



This is one of twenty new portable exhibits of types of fungi circulated among Chicago schools by the Department of the N. W. Harris Public School Extension.

acceptance for service of institutions other than public schools. In spite of these controls the department has been severely strained in maintaining an adequate supply of exhibits to fill its obligations. At the end of the year the circulation list totaled 517, an increase of 7 over December of the year before. Forty-eight requests for specific exhibits and for study-kit material that can be handled directly by the students were received (as in other years, the material most in demand was birdskins). In filling these requests, 30 standard exhibits and 865 bird, mammal, and rock specimens were sent out on special loans.

There were several short field trips to wooded areas round about Chicago for collecting plant material accessory to the exhibits under preparation. Some small mammals, amphibians, and birds that were also brought in from these trips have been prepared and stored for installation in exhibits until the services of an artist for painting habitat backgrounds are available to the department.

GIFTS TO THE MUSEUM

A bequest of \$50,000 was received by the Museum from the late Thomas J. Dee, of Chicago, for the purpose of establishing the Thomas J. Dee Fellowship Fund, and the will of the late Albert H. Wetten, Trustee of the Museum, provided \$7,500. S. C. Johnson and Son, Incorporated, Racine, Wisconsin, again gave \$4,000 for research on wax-bearing palms; Dr. Maurice L. Richardson, Lansing, Michigan, added \$4,350 to the Maurice L. Richardson Paleontological Fund; and Miss Margaret B. Conover, Chicago, added \$1,100 to the Conover Game-Bird Fund, which was established by her brother, the late Boardman Conover, a Trustee of the Museum and Research Associate in the Division of Birds. Stanley Field, President of the Museum, gave an additional \$8,000 for the endowment of the Museum; Sewell L. Avery, Trustee, gave \$10,000; Enterprise Paint Manufacturing Company, Chicago, gave \$1,000; Hannifin Corporation, Chicago, gave \$1,000; and \$434.45 was received from the estate of Mrs. Abby K. Babcock. Gifts of money in memory of Albert H. Wetten were made by Wm. McCormick Blair, Stanley Field, Clifford C. Gregg, Arthur Rubloff, and Mrs. Roderick S. Webster. Other gifts of money were received from Allport Charitable Trust, Atlas-Boxmakers Incorporated, Wm. McCormick Blair, Miss Frances J. Carter, Peder A. Christensen, C. Suydam Cutting, Albert B. Dick, Jr., William W. Judd, National Society of Colonial Dames of America (Illinois), Joseph H. Optner, Clarence B. Randall, John G. Searle, and Mrs. Ellen T. Smith, and there was even a gift of ten cents from Bobby Melville.

Gifts of materials are listed at the end of this Report and under the headings of the scientific departments (see page 89). Donors who have given to the Museum \$1,000 to \$100,000 in money or materials are elected Contributors by the Board of Trustees (see page 101 for names of Contributors). Contributors elected in 1953 are: Thomas J. Dee, posthumously elected (in recognition of his bequest listed above); Dr. Alfred E. Emerson, Chicago (gift of an important collection of termites); and Langdon Pearse, Winnetka, Illinois (gift of a collection of valuable books).

The Museum thanks its faithful volunteer workers for their help during the year. Some of them, designated as Research Associates and Associates, are included in the List of Staff at the beginning of this Report. Other volunteers are: Stanley Auerbach, Miss Holly R. Bennett, David Benson, Earl A. Cross, Tom Dolan, Richard Duffey, Miss Ruth Griswold, E. D. Hester, David Kistner, Miss Holly Merki, Harry G. Nelson, Edward Sella, and Ronald Ward.

STAFF OF THE MUSEUM

Lieutenant Colonel Robert Traub, of the Medical Service Corps of the United States Army, was elected Research Associate in the Division of Insects by the Board of Trustees, who also elected Clarence B. Mitchell, of Chicago, Research Associate in Photography. Dr. Waldemar Meister, of Chicago, was appointed Associate in Anatomy and Archie F. Wilson, of Flossmoor, Associate in Wood Anatomy. In October M. Kenneth Starr was appointed Curator of Asiatic Archaeology and Ethnology to fill a place long vacant in the Department of Anthropology, and John W. Thieret was appointed Assistant Curator of Economic Botany. Other appointments during the year were: Miss Lorraine Anderson, Assistant Registrar; Forest Highland, Assistant Recorder; Miss Mary Sue Hopkins, Secretary, Department of Geology; Walter Huebner, Preparator, Department of Botany; Miss M. Dianne Maurer, Secretary, Department of Botany; Mrs. Nancy R. Peters, Assistant to the Librarian; Mrs. Barbara Polikoff, Assistant, Division of Public Relations; Miss Jane F. Ross and George Stosius, Assistant Librarians; and Mrs. Jean Shultz, Guide-Lecturer, Raymond Foundation.

A. L. Stebbins, who was Assistant Auditor and has been a member of the staff since 1931, was appointed Auditor of the Museum to succeed William A. Bender, who resigned. Other resignations were: Mrs. Louise Boynton Denison, Assistant Librarian; Mrs. Dorothy B. Foss, Osteologist, Department of Zoology; Mrs. Jane Monson, Guide-Lecturer, Raymond Foundation; Miss Virginia Sharp, Secretary, Department of Botany; Miss Christine Tardy, Associate Public Relations Counsel; and Llewelyn Williams, Associate, Department of Botany. Mathias Dones, Preparator in the Department of Botany for many years, retired in January. George Woodward, Captain of the Guard, who joined the guard force in 1939, retired on September 30, and David Dunsmuir, member of the guard force since 1944, was appointed Captain of the Guard.

PENSIONERS

It is with deep regret that I record the death on October 2 of John Emil Liljeblad, former Assistant Curator of Insects, who was in the service of the Museum for twenty-five years before his retirement in 1940, and the death on November 30 of Alfred Cleveland Weed, retired Curator of Fishes, who joined the staff in 1921 and had charge of the Division of Fishes for twenty-one years.

SPECIAL EXHIBITS

The special exhibit for Members' Night of prints from Thornton's folio *The Temple of Flora*, lent by Walter S. Ross, of Chicago, and the supplementary display of botanical books from the Library of the Museum (see page 21) remained on exhibition in Stanley Field Hall until the end of October. Publication in April of *Birds of Mexico, A Guide for Field Identification* (see page 78), written by one member of the Museum's staff and illustrated by another (see 1952 Report, page 51), was chosen as the occasion for a special exhibit, arranged in co-operation with the University of Chicago Press, to show how such a book is made. Other special exhibits during the year were fifty photographs by Dr. Justine Cordwell, anthropologist, showing life and art of Nigeria; fifty photographs by Cyrus Townsend Brady, Jr., of New York, part of an exhibit of Australasian native arts; twenty-nine paintings in tempera by Bernard and Harriet Pertchick, of New York, of flowering trees of the Carribean, sponsored by Alcoa Steamship Company; drawings made

Loss of plant specimens from excessive tropical moisture was prevented by use of special drying equipment at base camp of the botanical expedition to Venezuela.



in this Museum by students in the Junior School and Day School of the Art Institute of Chicago; Third Annual Amateur Handcrafted Gem and Jewelry Competitive Exhibition, sponsored by the Chicago Lapidary Club; and Eighth Chicago International Exhibition of Nature Photography, held as an annual event under the auspices of the Nature Camera Club of Chicago and the Museum.

MUSEUM EXPEDITIONS

The Museum conducted seventeen expeditions and field trips in 1953. Their work is described in this Report under the headings of the scientific departments. Expeditions and field trips of 1953 and their leaders are:

DEPARTMENT OF ANTHROPOLOGY—*Southwest Archaeological Expedition* (Dr. Paul S. Martin, Chief Curator)

DEPARTMENT OF BOTANY—*Cuba Botanical Expedition* (Dr. B. E. Dahlgren, Curator Emeritus); *Southeastern States Botanical Field Trip* (Emil Sella, Curator of Exhibits); *Venezuela Botanical Expedition* (Dr. Julian A. Steyermark, Curator of the Phanerogamic Herbarium of the Museum)

DEPARTMENT OF GEOLOGY—*Mexico Geological Field Trip* (Dr. Sharat K. Roy, Chief Curator); *Paleobotanical Field Trips to the Braidwood-Wilmington (Illinois) Area* (George Langford, Curator of Fossil Plants); *Paleontological Field Trips in the Chicago Area* (Eugene S. Richardson, Jr., Curator of Fossil Invertebrates); *Wyoming Paleontological Expedition* (Orville L. Gilpin, Chief Preparator)

DEPARTMENT OF ZOOLOGY—*European Study Trip* (Dr. Karl P. Schmidt, Chief Curator); *Mexico Zoological Field Trip* (Emmet R. Blake, Associate Curator of Birds); *Midwest Zoological Field Work* (Henry S. Dybas, Associate Curator of Insects); *Northwest Zoological Field Trip* (Dr. Fritz Haas, Curator of Lower Invertebrates); *Peru Zoological Expedition, 1953-54* (Celestino Kalinowski, Assistant Taxidermist); *Philippines Study Trip* (Dr. Austin L. Rand, Curator of Birds); *United States Navy Medical Research Unit No. 3, Cairo, Egypt, 1949*—(Field Associate Harry Hoogstraal, Museum representative); *West Coast Zoological Field Trip* (Clifford H. Pope, Curator of Amphibians and Reptiles); *West Indies Zoological Expedition* (Donald Erdman)

Department of Anthropology

Research and Expeditions

The Southwest Archaeological Expedition of the Museum under the direction of Dr. Paul S. Martin, Chief Curator, assisted by Dr. John B. Rinaldo, Assistant Curator of Archaeology, spent four months in New Mexico digging in a thirty-room Mogollon Indian pueblo built about A.D. 1200. This pueblo, named Higgins Flat Site, is located a few miles northwest of Reserve, county seat of Catron County. Fourteen of the thirty rooms were completely excavated, a job that entailed moving from each room about ten to fifteen tons of rocks and a ton or so of dirt—the rocks were parts of collapsed walls and the dirt was wind-blown dust that had accumulated during the centuries since the pueblo was abandoned.

At various times since 1939 we have conducted researches on the life and culture of the Mogollon Indians, who lived in Pine Lawn Valley, New Mexico, from about 2500 B.C. to A.D. 1300, but most of our digging has been done in pit-houses (semisubterranean dwellings). During the 1953 season, however, our work was confined entirely to the Higgins Flat Pueblo (or village), which was entirely a surface dwelling—that is, the walls were erected on top of the ground and the floors of the first-story rooms were not depressed but were at ground level. We believe that a portion of this pueblo was two stories high. The masonry was not so finished as that found in some of the large pueblos in Chaco Canyon, but it may be ranked as good. The exterior walls were a composite of laminated slabs and shaped blocks of tuff (for the outer face) and of random rubble packed in mud (for the inner faces). The partition walls of the interior, usually thin and not so carefully laid up, were field stones or rubble laid in thick layers of mud mortar.

Our excavations demonstrated that this village (or clan apartment house) was the home of a dynamic, spirited, progressive people. Every room that was uncovered showed unmistakable signs of change, enlargement, redesigning, and alteration. Old walls had been torn out and new ones erected; partitions had been moved to provide greater or smaller space or storage space. Original floors, including appurtenances such as firepits and grinding bins, had been completely covered or re-covered by a thick superimposed layer of adobe plaster. In some rooms we found the original floor with two more above it. Nor had the building been completed in one operation. From a close study of the bonds and abutments at

the corners of the masonry walls and from a study of the ages of the pottery-types found in the various rooms we can state with a high degree of probability that the pueblo first consisted of a nucleus of six rooms and that as the clan increased in size and there were more children, aunts, uncles, grandmothers, and grandfathers to house, more rooms were added. The size of the rooms indicates that the people were not niggardly in outlook but tended to have a bountiful attitude, for most of the rooms were of generous dimensions (10 feet by 14 feet to 18 feet by 26 feet).

One of the rooms that was added in late times may have been used for religious purposes because it contained fewer domestic objects and yielded a tiponi of stone (symbol of an ear of corn). In another room we found five ceremonial objects on the floor near the fireplace. These objects, well-carved from tuff (volcanic ash-stone), are two animal effigies, both of which are equipped with small receptacles for offerings(?) of turquoise and corn meal, a tubular tobacco pipe (7 inches long), a dish, and a disk about 8 inches in diameter, all of them gaily painted with mineral paints in stripes of four colors—black, red, yellow, and green. The disk may represent a sun-symbol and the colors may have indicated the cardinal points. The use of these objects is problematical, but from our knowledge of modern near-by Indians (Zuni) we guess that they played an important ritualistic role in ceremonies having to do with hunting, good crops, rain, and general prosperity. Undoubtedly these paraphernalia were of undescrivable sanctity and are a rare find.

One architectural feature is of special interest. We found that several of the inner rooms had been supplied with enough fresh air to keep the fires going by means of special masonry-lined ducts (10 inches by 12 inches) that ran under the floors of the rooms. The flow of fresh air, which was brought from an outside aperture through the ducts and introduced into the inner room at floor level, was induced by the building of a fire.

Under the floors of several rooms we found fourteen skeletons, carefully buried and in many instances provided with tools, ornaments, and dishes for use in the life hereafter. The ages of these individuals at the time of death ranged from one year to thirty years, but most of the burials are of individuals who were less than five years old at death. It seems probable that careful interment and mortuary offerings of clothing, jewelry, food, pottery, and the like were provided because ideas concerning a spiritual life had developed. Furthermore, in all our digging experience we have rarely encountered infant burials so liberally endowed with material objects for use in the spirit world.



Higgins Flat Pueblo, western New Mexico, excavated by Southwest Archaeological Expedition in 1953, is shown in this photograph taken from plane of L. H. Keys.

The Mogollon Indian bill of fare of the 13th century was varied and nutritious. The staple crops were corn, beans, and squashes, and these were supplemented by several wild foods such as yucca pods, walnuts, pinyon nuts, sunflower seeds, pigweed, amaranthus, wild grapes, tansy mustard, and prickly-pear-cactus fruit. Not content with the corn of his grandfathers, the Mogollon Indian constantly selected and bred strains better suited to this environment. Varieties were sought that were resistant to drought and would hybridize with the older local varieties. We know from our previous research in the area that these Indian farmers were responsible, in part at least, for a continuous improvement in the size of the ear and of the kernels and in a reduction of the number of kernel-rows. For example, at about the beginning of the Christian

Era, the cobs were short (about 2 inches long) and the number of kernel-rows was predominantly 10, 12, and 14. By A.D. 1300, the ears of corn were longer and fatter and the predominant number of kernel-rows was 8. This makes for more food per ear.

The site on which we worked this season spans the property of two ranches owned respectively by Owen McCarty and Ray Hudson. Lester H. Keys, M.D., made his airplane available and with the assistance of James Barter took photographs from aloft. The expedition returned with an excellent collection of materials that will aid in piecing together the culture of the Mogollon Indians of New Mexico in the 13th century. The collection includes about seventy whole or restorable pots, bits of charred matting and sandals, charred corn, beans, and squashes, implements of bone and stone, ornaments of shell and turquoise, and ceremonial objects. Some of these materials will be used for exhibition purposes and the remainder for study and exchange.

During the first months of the year Assistant Curator Rinaldo collaborated with Chief Curator Martin in the preparation of a detailed report on the excavations during the summer of 1952 of caves and cliff-dwellings in western New Mexico. From his stratigraphic and statistical analysis of the stone, bone, and clay artifacts recovered from these caves he concluded that projectile-point and grinding-tool types are useful as horizon markers in this area. He also prepared a section on methods of excavation for the report and directed preparation of maps and illustrations. From June to September he supervised excavation for the Southwest Archaeological Expedition and, after his return from the field, began a study of the sequence in which the rooms were built in the prehistoric village excavated during the summer and started an analysis of the stone, bone, and clay artifacts collected there. From time to time he did research in Southwestern Indian ethnology and archaeology for the revision and installation of exhibits in Hall 7 (Ancient and Modern Indians of the Southwestern United States).

Donald Collier, Curator of South American Archaeology and Ethnology, completed the illustrations for his report on excavations in 1946 in Viru Valley by the Archaeological Expedition to Peru and finished revision of the manuscript. He collaborated with Dr. A. L. Kroeber, Research Associate in American Archaeology, on a study of the Museum's Nazca collection from the south coast of Peru and also worked on a general study of the development of civilization in Peru. He continued to assist Dr. Willard F. Libby, of the Institute for Nuclear Studies, University of Chicago, in selecting archaeological samples for radiocarbon dating.



Five painted stone objects of great sanctity were found in Higgins Flat Pueblo: two animal effigies (above), a tubular tobacco pipe, a sun-symbol disk, and a dish.

During the first part of the year Miss Elaine Bluhm, Assistant in Archaeology, analyzed cordage, sandals, and textile fragments from Cospers Cliff Dwelling, Hinkle Park Cliff Dwelling, and O Block Cave, New Mexico, results of which study are included in the final report by Martin and Rinaldo on the sites excavated in 1952 (to be published in 1954), and continued study of ceramic and lithic material from the Sawmill Site, a Mogollon village with large rectangular kiva excavated by the Southwest Archaeological Expeditions of 1951 and 1952. For a period of ten weekends in the summer she and David J. Wenner, Jr., of the Earth Science Club of Northern Illinois, directed the excavation of a late prehistoric Indian village near Thornton, Illinois. A digging crew of volunteers and members of the club undertook the project to salvage as much information as could be recovered from the site, which will be destroyed by a new highway. After it is studied, material recovered from the excavation will be given to the Museum and to the Department of Anthropology and Sociology of the University of Illinois. During the year she reorganized the photographs in thirty albums and completed a cross-reference index for them.

M. Kenneth Starr, Curator of Asiatic Archaeology and Ethnology, joined the staff in mid-October. In addition to familiarizing himself with the materials in the Asiatic collections, he has begun to direct his energies toward four salient aspects of his duties: (1) planning for the complete renovation of the exhibits on East Asia, (2) expanding and rounding the Asiatic collections, (3) selectively adding to the Museum's library of writings on the anthropology of the Far East, and (4) continuing his research on the Chou period (traditionally 1122-256 B.C.) of China, research that involves the study of a portion of the Museum's collections.

George I. Quimby, Curator of Exhibits, continued research in North American ethnology and archaeology for the exhibition program. He completed a report on Paleo-Indians and paleogeography and continued research on Paleo-Indians in the Great Lakes and

Diorama of Pomo Indian village in California shows men making reed boat and fish trap while squaws prepare acorn meal (Hall 6, Indians of Western North America).



Mississippi Valley regions. For the exhibition program it was necessary to reorganize the reference collections in several store-rooms, to strip cases formerly on exhibition, and to make inventories of reference collections and of specimens placed on exhibition. This work was carried out by Phillip Lewis, assistant, until the latter part of March and by Whitney Halstead, assistant, for the rest of the year under the supervision of Curator of Exhibits Quimby.

Accessions—Anthropology

Whole or nearly whole pottery vessels from any archaeological site are seldom found, and pottery vessels of any kind from the extinct Mogollon culture are singularly uncommon. Therefore, when about seventy whole or restorable vessels were found in an ancient Mogollon village in New Mexico, it was an occasion for rejoicing. These pots, dating from about A.D. 1200, include not only utility or cooking jars but also painted and decorated types, such as black-on-whites, black-on-reds, and polychromes. From deserted rooms, from graves, and from garbage dumps tools of bone and stone, objects of baked clay, charred textiles, and garden products were recovered. A most remarkable find on the floor of a room consists of five painted stone objects that undoubtedly were used in religious performances concerned with prosperity of the town (see pages 34 and 37).

Exhibits—Anthropology

Under the direction of Curator of Exhibits Quimby nineteen new exhibits and twenty-three reinstallations were completed during the year by Gustaf Dalstrom, Artist, Alfred Lee Rowell, Dioramist, Walter C. Reese, Preparator, and John Pletineckx, Ceramic Restorer. Fourteen of the new exhibits (including two miniature dioramas) were added to Hall 6 (Indian Tribes of Western North America), thus completing the California section as well as the hall itself, which contains fifty-two exhibits and is divided into three parts: Indians of the Plains, Intermountain tribes that show Plains influence, and Pomo Indians of California. In George T. and Frances Gaylord Hall (Hall 24, Ancient Chinese Civilization) sixteen exhibits were reinstalled on green backgrounds. Revision of Hall 7 (Ancient and Modern Indians of the Southwestern United States) was begun with reinstallation of seven exhibits and creation of five new ones. This hall will consist of four divisions.

Department of Botany

Research and Expeditions

Paul C. Standley, Curator Emeritus of the Phanerogamic Herbarium, in residence at the Escuela Agrícola Panamericana near Tegucigalpa, Honduras, devoted his time to identification of specimens collected by various contributors, work on an annotated check list of plants of Honduras to be published by the Honduran government, and preparation of several papers on Honduran plants that were printed in *Ceiba*, the scientific journal issued by the Escuela (see page 77). J. Francis Macbride, Curator of Peruvian Botany, spent his full time preparing another part of his *Flora of Peru*, including a number of families following the Theaceae. Dr. Hugh C. Cutler, former Curator of Economic Botany and presently a staff member of Missouri Botanical Garden, continued his archaeological explorations in the Southwest with the aid of a grant from the Wenner-Gren Foundation for Anthropological Research.

Dr. Earl E. Sherff, Research Associate in Systematic Botany, prepared a series of papers on various dicotyledonous plants of the Hawaiian Islands and on certain composites of Mexico and south-eastern Africa (see page 77). Dr. José Cuatrecasas, former Curator of Colombian Botany, continued his studies on the flora of Colombia with the aid of a grant from the National Science Foundation. Several papers based mainly on his own collections and on specimens received on loan from various herbaria were published during the year (see page 76).

Dr. B. E. Dahlgren, Curator Emeritus of Botany, continued his research on palms, particularly of the genus *Copernicia*, which includes the well-known wax palms of northeastern Brazil and the less-known one of El Chaco, with two or three other less-important species of South America, while all others of its thirty-odd species are confined to the island of Cuba or growing almost within sight of its shores on the Isle of Pines and in Haiti. To gain knowledge of plants of this kind, of which only small fragments can be preserved well in any standard herbarium, extensive studies in the field as well as in the laboratory and herbarium are required. With the aid of funds provided by S. C. Johnson and Son, Incorporated, the Curator Emeritus spent two months in Cuba, accompanied by John W. Thieret (see page 43), and brought back to the Museum considerable material, notes, and photographs. Thanks to the kindness of L. W. Hansen of Camagüey and of Dr. Ian D. Clement,

director of Atkins Garden and Laboratory of Harvard University at Soledad, seeds from palms marked in the spring were received from various local collectors and forwarded to the Museum. Some of these were germinated and grown in hydroponic solutions for seedling stages and cytological studies. During the latter part of the year large and excellent collections of Paraguayan palms collected by Dr. K. S. Markley, Dr. E. S. McLoud, and E. D. Kitzke were received from the S. C. Johnson Company.

Dr. Theodor Just, Chief Curator, continued his study of living and fossil cycads and cycadeoids and wrote two invitation papers advocating the preparation of generic synopses of the entire plant kingdom. One paper was written as an introductory essay to a symposium on "Plant Genera" sponsored by the American Society of Plant Taxonomists and the other for a conference called by the National Research Council on "The Importance and Needs of Systematics in Biology" (see page 76).

Dr. Julian A. Steyermark, Curator of the Phanerogamic Herbarium, left the United States on March 7 from New Orleans for an expedition to Chimantá-tepuí, an unexplored mountain in the "Lost World" of Venezuela, and returned to the Museum in August. During the first month and a half he was accompanied by a young naturalist, Charles Griffin, who collected animals of various groups for the Museum. The expedition first approached Chimantá-tepuí from the western side by way of the Río Apacara and Río Abacapa and spent a month penetrating this section, but, because the Indians insisted on returning to their homes at the end of a month, it was not possible to continue the exploration of this part of the mountain to the highest portion of the summit where the most unusual species are found. Starting on May 4, the expedition approached the same mountain from the south by way of the Río Aparurén and Río Tírica and, after nearly two weeks of arduous canoe travel over perilous rapids, reached the first camp site. From this base camp, at 3,000 feet above sea level, collecting continued for the rest of the time at various levels of Chimantá-tepuí up to its summit, which was gained after weeks of difficult climbing and trail-making through an elfin forest over aerial roots and branches of low-growing trees and shrubs. Several camp sites were established between the base camp and the summit camp at 8,200 feet. A large camp was also made at the base of the bluffs at 500 feet on a spur leading to another section of the mountain.

The flora varies at each level—the degree of endemism and species new to science increases with the elevation, and the majority of species found on the summit are entirely unknown to science.

Many species of plants found at the base of the bluffs did not occur on the dissected plateaus of the summit. The lower and upper shoulders of the plateau also differ strikingly in contrasting vegetation, and fantastic forms of plant life, such as have not been seen anywhere, were photographed and adequately collected in series of duplicates. A number of genera new to science were found here. Conspicuous elements of the flora were: peculiar pitcher plants (*Heliamphora*); giant purple bladderworts (*Utricularia humboldtii*), with flowers the size of sweet peas, growing as epiphytes in the water-filled bases of the giant bromeliad *Brocchinia tatei*; peculiar species of the fern *Pterozonium*; the endemic bromeliad genera, *Navia*, *Brocchinia*, and *Connellia*; century-plant-like *Abolboda sceptrum* with needle-tipped rosettes of silvery dagger-shaped leaves; several species of the endemic ericaceous *Tepuia*; many strange species of the yellow-flowered *Stegolepis* and *Rapatea*; restricted forms of melastomes; rubiacs; woody members of the gentian family; many kinds of pipeworts (*Eriocaulaceae*); yellow stargrasses (*Xyris*); *Ilex*; *Podocarpus*; *Drimys*; and *Magnolia*; as well as numerous species of orchids and ferns and many peculiar genera of Compositae.

A total of 1,500 numbers amounting to 10,000 specimens of plants was collected. So much time was required to reach the summit that it was possible to devote only one week to collecting on the summit itself, and, because the mountain is very extensive and has many ramifications in its 50-by-40-mile areal surface, only an estimated one-thousandth of its summit-area could be investigated. It is hoped that a more intensive exploration of the weird summit flora can be made while the trails leading to the summit are still intact. Dr. Bassett Maguire and Dr. John Wurdack of New York Botanical Garden explored a section of the Acopán-tepuí portion of the Chimantá Massif on the east about the same time that Curator Steyermark carried on his explorations from the west and south. The collections will be combined and the whole series studied as a joint project of New York Botanical Garden and Chicago Natural History Museum. The novelties resulting from these expeditions will be published in a joint report.

After returning to the Museum, Curator Steyermark devoted his time to determinations of South American, Central American, and Mexican collections and continued to revise the manuscript of several parts of *Flora of Guatemala* (Standley and Steyermark). As a result of the study of collections that he made in Venezuela during 1943-45, the third part of *Contributions to the Flora of Venezuela* (Steyermark and collaborators), which contains descriptions and illustrations of new species of the families Ericaceae through



A giant purple bladderwort growing as an epiphyte in the water-filled base of a giant bromeliad was photographed in Venezuela by Curator Julian A. Steyermark.

Compositae, was published by the Museum in December. The fourth part of this work, a report on species and genera new to Venezuela, together with critical comments on range extensions and ecological notes of the regions visited, is in press.

In September the second part of *Orchids of Guatemala* by the late Professor Oakes Ames (director of the Botanical Museum of Harvard University, 1935-50) and Dr. Donovan Stewart Correll (United States Department of Agriculture, formerly research associate at the Botanical Museum of Harvard University) was published by the Museum. Profusely illustrated, Part 2 contains descriptions and accounts of sixty genera and their species as represented in Guatemala. The bound edition offered for sale to orchid lovers and horticulturists has been very well received.

In the early part of the year John W. Thieret, Chicago Natural History Museum Fellow, Department of Botany, University of Chicago, continued his investigation of seed and fruit morphology, particularly of the Scrophulariaceae, and prepared his dissertation under the direction of Chief Curator Just. Following his appoint-

ment as Assistant Curator of Economic Botany in October, he began a revision of the family Scrophulariaceae as represented in Central America. In addition he spent considerable time in reorganizing the Museum's wood collection, which now contains about 41,000 specimens. Mrs. Ann Bigelow, assisted by Robert Yule, completed the labeling of approximately 11,000 specimens (including duplicates) and finished work on the collection of woods of the United States from the College of Forestry of the State University of New York and the identified numbers of the Williams and Krukoff collections of South American woods. In addition, she packed in readiness for sale or exchange over 5,000 duplicate wood-specimens. A large collection of samples of Ecuadorean trees was cut into standard-size wood-specimens by Walter Huebner, Preparator.

Dr. Francis Drouet, Curator of the Cryptogamic Herbarium, identified numerous algae and did research, with William A. Daily of the herbarium of Butler University, on the classification of microscopic algae. Dr. Hanford Tiffany and Donald Richards, Research Associates in Cryptogamic Botany, continued their studies of Oedogoniaceae and mosses, respectively. Dr. E. P. Killip, Research Associate in Phanerogamic Botany, spent some time working on the algae of the Isle of Pines and the Florida keys. Dr. Rolf Singer, Guggenheim Fellow, pursued his research on tropical American fungi in the cryptogamic herbarium during the period from January to May. During the summer, W. Jan Newhouse of the University of Hawaii studied the Myxophyceae of the Society Islands, and Dr. Chester S. Nielsen and Dr. Grace C. Madsen of Florida State University studied the algae of Florida. Miss Linda Newton of the British Museum (Natural History), Mrs. Fay K. Daily of Butler University, and Miss Margaret E. Barr of the University of Vancouver each spent a week or more at the Museum in research on various groups of cryptogams.

Since 1947 Joshua Daston, Assistant in Botany, has duplicated some 25,000 negatives of the type-photograph collection housed in the Museum. Far larger than any similar collection, the type-photograph collection of the Museum contains at present 41,943 catalogued negatives of type or historical specimens of tropical American plants deposited in the major herbaria of Europe. Prepared before World War II during a ten-year period under the supervision of J. Francis Macbride, Curator of Peruvian Botany, the negatives were made on nitrate-base film. Unfortunately a number of these negatives showed signs of deterioration, and therefore constituted a fire hazard. Their great scientific value made it desirable to convert the entire collection from nitrate-base film to



Deteriorated negatives of type-photographs are being replaced by restored negatives through the skillful work Joshua Daston, Assistant in Botany (see opposite page).

modern safety-base film. The results obtained by Assistant Daston through skillful use of special physical and chemical methods and processes are phenomenal (see the accompanying illustration).

Emil Sella, Curator of Exhibits, left early in the summer with his son Edward on a four-week collecting trip to Tennessee and North Carolina. The last two weeks in June were productively spent in the Great Smoky Mountains National Park in the vicinity of Gatlinburg, Tennessee. Working facilities at park headquarters were made available through the courtesy of Edward A. Hummel, park superintendent. Arthur Stupka, park naturalist, gave valuable assistance that saved Curator Sella considerable time and effort in locating and collecting the desired material, leafy branches needed for reproductions to supplement exhibits. Taking advantage of the abundant flowering period of June, some additional specimens were also collected, among them flowering branches of purple rhododendron and mountain camellia (*Stewartia*). The second half of the trip centered in Chapel Hill at the University of North Carolina, where ideal laboratory facilities were offered by Dr. J. N. Couch and generous aid was given by Dr. H. L. Totten.

Accessions—Botany

The largest gifts this year to the phanerogamic herbarium include 2,545 plant specimens from the Chicago area. Major collections of plants acquired through exchange came from Cuba (1,270), Haiti (438), Honduras (326), Africa (362), Japan (400), and Mexico (134). The 10,000 specimens gathered in 1953 through the Museum's botanical expedition to Venezuela represent the largest single collection added to the phanerogamic herbarium. Notable accessions of the cryptogamic herbarium were 2,739 algae of the Hansgirg Collection (gift) and 378 miscellaneous algae (exchange), chiefly Romanian, from the Natural History Museum in Vienna and 2,500 fungi of Michigan purchased from Dr. Rolf Singer, of Nebraska Wesleyan University (see page 44), with the funds provided by Research Associate Richards. During the year 3,268 plants were mounted in the phanerogamic herbarium. Poisoning and mounting was done by Miss Olive Doig, Mrs. Jennie Pletinckx, Miss Maruja Kalinowski, and Nils Siegbahn. Mrs. Effie M. Schugman and Miss Alice Middleton mounted plants in the cryptogamic herbarium.

Exhibits—Botany

Continuous progress is being made in Charles F. Millspaugh Hall (North American Woods, Hall 26). During the year eight leafy branches were completed and added to the exhibits. Of these, the models of sweet gum (*Liquidambar styraciflua*), pecan (*Carya pecan*), osage orange (*Maclura pomifera*), and chestnut (*Castanea dentata*) were assembled by Artist-Preparator Samuel H. Grove, Jr., and the branch of ironwood (*Ostrya virginiana*) and restoration of shortleaf pine (*Pinus echinata*) by Curator of Exhibits Sella. Technician Frank Boryca assembled the models of sweet birch (*Betula lenta*) and willow oak (*Quercus phellos*) and prepared the necessary foliage for the entire group. The two important installations in Martin A. and Carrie Ryerson Hall (Hall 29, Plant Life) were reproductions of a branch of camphor (*Cinnamomum camphora*) in the fruiting stage, which was added to the Laurel family exhibit, and a branch of silver-bell in flower (*Halesia diptera*), a member of the Storax family, prepared, respectively, by Artist-Preparator Grove and Curator Sella. In the Hall of Food Plants (Hall 25) rearranged installations were made of exhibits of some important small grains, including wheat, oats, rice, barley, and rye. In this, Curator Sella was assisted by Preparator Huebner, who also reinstalled the transparencies.

Department of Geology

Research and Expeditions

As reported previously, Bryan Patterson, Curator of Fossil Mammals, spent 1952 and the early part of 1953 in Argentina studying type and other specimens of fossil mammals in collections there. For the opportunity to carry out this work thanks are given to the John Simon Guggenheim Memorial Foundation and to the authorities of Argentine museums, especially the Museo Argentino de Ciencias Naturales and the Museo de la Ciudad Eva Peron (formerly La Plata). While in Argentina, Curator Patterson prepared two papers on fossil mammals, both published in 1953 (see page 77), and others, some in collaboration with Jorge L. Kraglievich of the Museo Argentino, are in preparation. Since his return he has continued working on these and on completing other studies laid aside during his absence.

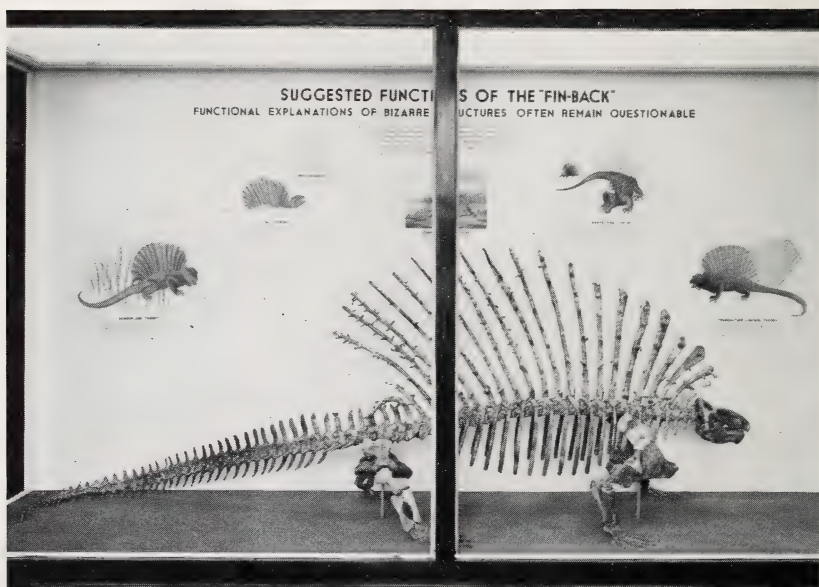
Dr. Rainer Zangerl, Curator of Fossil Reptiles, continued his researches on the vertebrate fauna of the Selma formation of Alabama, and the results of his studies on the turtles of the family Protostegidae and Toxochelyidae were published by the Museum during the year. He also completed a paper, "Die Oligocaenen Meerschilddkroten von Glarus," to be published early in 1954 in *Abhandlungen der Schweizerischen Palaeontologischen Gesellschaft*. His current studies, in co-operation with Preparator William D. Turnbull, include a restudy of the Miocene sea-turtle *Procalpochelys grandaeva* and the genus *Catapleura*. Another sea-turtle from the Mooreville Chalk of Alabama is also a subject of his present studies and continuing research.

Dr. Robert H. Denison, Curator of Fossil Fishes, continued his work on Devonian fishes, of which the Museum now possesses an excellent collection as the result of the field work that he has been conducting during the past several years. His paper on Heterostraci from the Early Devonian of northern Utah was published during the year by the Museum. An opportunity to extend his studies and collecting farther afield was afforded by the award of a John Simon Guggenheim Memorial Foundation Fellowship for 1953 and 1954. During 1953 he worked in Norway and Sweden, comparing North American Devonian material with the unrivaled collections in museums there, and he will devote the first half of 1954 to study and field work in the British Isles. He had planned field work at Beartooth Butte, Wyoming—the outcome of a favorable reconnais-

sance made there in 1949—but his departure for Europe prevented his taking part. In his absence the project was ably carried out by Orville L. Gilpin, Chief Preparator of Fossils, assisted by Preparator Turnbull and Mrs. Priscilla F. Turnbull, Assistant in Fossil Vertebrates. The work of integrating the collections of fossil vertebrates from the University of Chicago into those of the Museum was continued by Mrs. Turnbull, who systematically arranged the Cretaceous, Eocene, most of the Oligocene, and the Pleistocene mammals and also gave attention to the fossil turtles and fishes. Although taking proper care of the collection is routine, this work facilitates both research and exhibition and thus forms the valued background for success in the varied activities of the Museum, particularly those connected with research and exhibition.

George Langford, Curator of Fossil Plants, has added several new forms of Pennsylvanian plants to the monograph on Pennsylvanian flora that he has been preparing for the past few years. During the field season he collected from the Pennsylvanian deposits, west of Wilmington, Illinois, a number of specimens showing large

One of the few known skeletons of the spectacular reptile *Edaphosaurus* is now exhibited in Ernest R. Graham Hall, with illustrations (on wall of case) showing suggestions by paleontologists of the probable function of its weird back-spines.



stem-scars hitherto known as *Caulopteris* and *Megaphyton*. He believes that he has secured evidence to conclude, at least for the time being, that they are not scars of branches or stems of fronds but that they represent nut-like fruits growing directly out of the stem, and he will seek further confirmatory evidence during the field season in 1954. He also collected a large number of plant specimens from the Upper Cretaceous and Lower Eocene clays of Tennessee and Mississippi. These specimens, being embedded in friable clay, necessitate careful preparation for their permanent preservation, and a great deal of his time was devoted to the task.

Eugene S. Richardson, Jr., Curator of Fossil Invertebrates, continued his studies of Coal Age insects from the strip mines of Will and Grundy counties, Illinois, and completed a manuscript on them in which several new species were described. His studies were based on specimens collected by staff members of the Department of Geology and on specimens borrowed from other collections. In connection with his studies of the Coal Age fauna of that area he prepared manuscripts on the general occurrence and paleoecology of the fossils, on a new form of marine worm, and on some problematical spirally grooved fossils. Currently he is working on a species of amphineuran mollusk ("sea-mouse") and a rare giant arthropod from the same deposits. His interest in the invertebrate fauna of Will and Grundy counties led him to several brief collecting trips to the strip mines during the field season.

Dr. Sharat K. Roy, Chief Curator, devoted much of his time to supervisory work and to writing descriptive labels in connection with the reinstallation of the Hall of Physical Geology (Hall 34). Early in the year he studied the post-eruptive stage of the volcano Paricutin in Mexico and collected in and around the crater a number of specimens that could not have been collected while the volcano was active. While in Mexico he went through various areas in which silver, opal, and onyx mines are located. He continued his studies of meteorites and spent three weeks at the United States National Museum seeking data relating to various problems that had arisen in the course of his work. A paper on fresh-water limestone from the Torola Valley of northeastern El Salvador, prepared by him in collaboration with Robert K. Wyant, Curator of Economic Geology, was published by the Museum. It is also to be published in Spanish early in 1954 by the Instituto Tropical de Investigaciones Cientificas, San Salvador. The material upon which the paper is based was collected by Chief Curator Roy in 1951 during his stay in El Salvador as the Museum's representative for research in geology at the Tropical Institute.

In the geochemical laboratory, Curator Wyant worked on the separation of schreibersite and cohenite by chemical methods in several iron meteorites and made a statistical correlation of trace elements in sedimentary rocks that have undergone metasomatism. In connection with a paper on chondrules (see page 73) he examined the thin sections of chondritic meteorites in the collection of the Museum, prepared about one hundred color microphotographs of various types of chondrules, and, as comparative material, photographed a number of spherulitic forms in obsidian and natural glass. Late in September he visited the United States National Museum, where he conferred with Dr. E. P. Henderson on problems of meteorites and meteorite analyses.

Accessions—Geology

A portion of the skeleton of an American mastodon found near Michigan City, Indiana, was presented by Ernest Delco, Mrs. D. L. Casey gave a fine skull and jaws of *Eporeodon* from the John Day formation of Oregon, and an excellent specimen of the uncommon Pennsylvanian amphibian *Phlegothontia* was found and presented by the Turnbulls. Of special importance to the current studies of Curator Richardson are the gifts of five rare fossil insects from the Pennsylvanian of Illinois, one each from George Langford, Jr., Charles A. Ross, the Turnbulls, Jon Whitfield, and Mrs. Robert H. Whitfield. The largest number of specimens added to the study-collection during the year—265 fossil invertebrates from various localities—came from the collections of Dr. John H. Britts (deceased), of Clinton, Missouri. E. E. Schneider presented a hand specimen of blue opaline quartz porphyry and several small crystals from Texas, and a double strand seed-pearl necklace was the gift of Mrs. Marion Rubens, of Chicago.

Exhibits—Geology

Nine new exhibits were completed and installed in the new Hall of Physical Geology (Hall 34), bringing the number of exhibits now on display to eighteen. When completed, the hall will contain thirty-seven exhibits. All efforts are being made to present the subject-matter to the public and to students of geology in as lucid and attractive a manner as possible. When specimens seemed inadequate to explain fully a certain conception, appropriate illustra-

tive materials were painted directly on the wall of the exhibition case as a substitute or as a supplement with excellent results. Participating in the program, as before, are Harry E. Changnon, Curator of Exhibits, Miss Maidi Wiebe, Artist, and Henry Horback and Henry U. Taylor, Preparators. Chief Curator Roy acted in a supervisory capacity and wrote the descriptive labels. The skeleton of the reptile *Edaphosaurus* was remounted by Chief Preparator Gilpin and Preparator Stanley Kuczek and placed in Ernest R. Graham Hall (Hall 38, Fossil Vertebrates). This carried to a successful conclusion the reinstallation of the magnificent series of Permian amphibian and reptile skeletons included in the gift of fossil vertebrates received from the University of Chicago in 1947. Work has now been resumed on dinosaurs and other reptiles that were laid aside in 1948 when the program of remounting the Permian skeletons was begun (typical case for these is shown on page 48).

This is one of nine new exhibits placed in the Hall of Physical Geology (Hall 34).

NATURE OF THE EARTH **SHAPE, OUTER ZONES AND SURFACE RELIEF**

FACTS ABOUT THE EARTH

SIZE
 EQUATORIAL CIRCUMFERENCE - 24,901 MILES
 POLAR CIRCUMFERENCE - 24,397 MILES

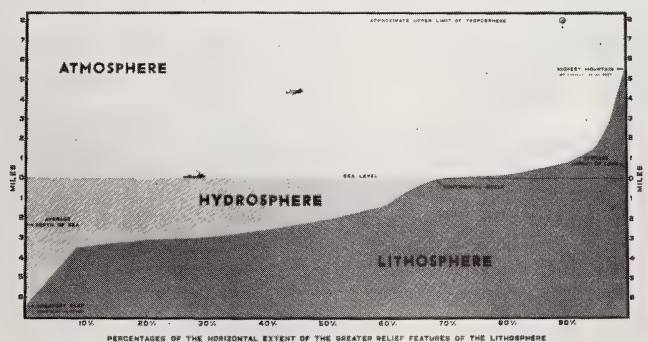
AREA
 SEA FLOOR 170,700,000 SQ. KM. - 65,900,000 SQ. MILES
 LAND 149,000,000 SQ. KM. - 57,900,000 SQ. MILES

VOLUME, DENSITY AND MASS
 VOLUME - 1,083,210,000,000,000 CU. KM.
 DENSITY - 5.515
 MASS - 5,972,000,000,000,000,000 KG.

RELIEF
 DEEPEST KNOWN DEPTH 11,033 FEET BELOW SEA LEVEL
 DEEPEST KNOWN DEPTH 35,990 FEET BELOW SEA LEVEL

THE SHAPE OF THE EARTH

THE EARTH IS SPHERICAL, HOWEVER, IT DEVIATES THE LAW OF GRAVITATION. ALL THE PARTICLES OF MATTER TEND TO MOVE TO THE CENTER OF GRAVITY AND THE SPHERICAL SHAPE IS THE MOST PERFECT. THE EARTH IS NOT A PERFECT SPHERE, BUT A SPHEROID. THE DEVIATION FROM THE PERFECT SPHERE IS DUE TO THE FLATNESS OF THE EARTH. THE EARTH IS NOT A PERFECT SPHERE, BUT A SPHEROID. THE DEVIATION FROM THE PERFECT SPHERE IS DUE TO THE FLATNESS OF THE EARTH.



Department of Zoology

Research and Expeditions

In intervals of time salvaged from his administrative duties, Chief Curator Karl P. Schmidt continued his long-term studies of American coral snakes and the herpetological fauna of southwestern Asia and prepared two historical essays, "A Century of Studies in Herpetology, 1850-1950," and "A Century of Studies in Animal Geography, 1850-1950," to be published in a centenary volume by the California Academy of Sciences. He made a two-week reconnaissance of Israel, where, with the active aid of colleagues at the Hebrew University in Jerusalem, the Biological Institute in Tel Aviv, and of the Teachers Seminary near Haifa, he was able to visit nearly all parts of the country, to see the several distinctive environmental provinces, and to see living specimens of Palestinian snakes and lizards long known to him from preserved material.

Research in the Division of Mammals has been varied and almost world-wide. Curator Colin Campbell Sanborn continued his special studies of bats and completed reports on small collections of mammals from the Philippines, French Equatorial Africa, Venezuela, Peru, and Arabia. Assistant Curator Philip Herskovitz has undertaken revisions of five genera of South American rodents and is engaged also on a reclassification of New World deer. The Peru Zoological Expedition, 1953-54, of which Celestino Kalinowski, Assistant Taxidermist, is in charge, left in March to make general collections of vertebrates in south-central Peru and reports satisfactory results at the end of the year. Dominick Villa, Tanner, continued his effective care of skins of large mammals and the preparation or reconditioning of smaller specimens, with the aid of Assistant Taxidermist Kalinowski before his departure for Peru.

In the Division of Birds the studies of Curator Austin L. Rand on Philippine birds were crystallized in a check list of birds of the archipelago, which was completed at the end of the year, and other studies of North American, Central American, African, and Asiatic birds have resulted in manuscripts in press. In addition he revised the manuscript by Dr. V. G. L. van Someren on habits of East African birds for publication by the Museum. The manuscript of "Handbook of Birds of El Salvador," prepared by Curator Rand (who in 1951 was the Museum's representative in zoology at the Instituto Tropical de Investigaciones Cientificas in San Salvador) and Research Associate Melvin A. Taylor, Jr., was translated into

Spanish by the Tropical Institute for publication by the Institute. At the end of the year Curator Rand was in the Philippines collecting and studying birds with Field Associate D. S. Rabor. Associate Curator Emmet R. Blake continued his study of neotropical birds, with special reference to Mexican fauna and to Panamanian, Colombian, and Bolivian collections, and completed the bibliographic work for the revision of the American jays, blackbirds and allies, and vireos to be published as sections of Peters' *Check-List of Birds of the World* by Harvard University Press. In May he began a three-month field-survey of Mexican bird-life and, with his own field guide, *Birds of Mexico*, in hand (see page 78), devoted special attention to problems of distribution, ecological association, and field identification. The departmental carry-all, which provided a mobile base and effective transportation, enabled him to visit twenty-six of the thirty-one Mexican states and all but five of the eighteen recognized biotic provinces, leaving out only the Yucatan and Lower California peninsulas. This journey was, in effect, a reconnaissance of Mexico of great importance to future studies by American ornithologists. Mrs. Ellen T. Smith, Associate, who continued her volunteer aid, worked several days each month identifying birds in collections from Borneo.

Curator Clifford H. Pope, Curator of Amphibians and Reptiles, continued his study of amphibians and reptiles of Mexico and of salamanders of western North America. He engaged in field studies and collecting in northwestern Mexico, California, and Oregon early in the year and in July took a six-month leave of absence to work on his book on reptiles of the world. Hymen Marx, Assistant, completed a study of the snake genus *Walterinnesia*, described a new Colombian species of the remarkable worm snake *Anomalepis*, and did bibliographic work for the study-collection of frogs of the Belgian Congo (received from Parcs Nationaux du Congo Belge). He engaged in studies of Bornean reptiles with Robert F. Inger, Assistant Curator of Fishes, and on crocodilians with Dr. Frederick J. Medem, Guggenheim Fellow who, as guest-scholar at the Museum, is studying his own material together with that of the Division of Amphibians and Reptiles (Dr. Medem is Professor *ad honorem* of the Instituto de Ciencias Naturales, Universidad Nacional, Bogotá, Colombia). Miss Laura Brodie, Assistant, continued her study of the autumn aggregation of blue racers in the Indiana dunes. Stanley Rand, of DePauw University, who served as temporary assistant to Chief Curator Schmidt during the summer, worked on problems of Central American herpetology. He had made a collection of amphibians and reptiles in El Salvador in 1951.



The panoramic background on the curved wall behind the specimens in the habitat group of Upper Nile marsh birds was painted by Douglas E. Tibbitts, Illustrator, from a scale-painting made from kodachromes that were taken in the field (Hall 20).

In the Division of Fishes Curator Loren P. Woods continued his investigation of the fish fauna of the Gulf of Mexico and adjacent Caribbean waters in regard to geographic and ecological distribution and taxonomy, with particular attention to the little-studied pelagic fishes. He completed a revision of the Western Atlantic fishes of the genus *Eques*. Assistant Curator Inger continued his studies of Bornean fishes and completed papers for publication on the genera *Plesiops* and *Brachygobius*. Study of feeding habits of fishes in tropical streams, begun last year by Inger, was advanced by the aid of Thomas E. Moore and Richard B. Selander, entomologists from Illinois Natural History Survey. In connection with this project the fishes of a local stream are being investigated. Mrs. Marion Grey, Associate, completed her check list of the deep-sea fishes found below one thousand fathoms and her revision of the fish family Gempylidae. The West Indies Zoological Expedition, under direction of Donald Erdman (formerly of the Division of Insects, United States National Museum), made an excellent collection of specimens from the coasts of Panama, Costa Rica, Jamaica, and Haiti that are essential to Curator Woods's studies of fauna of the Gulf of Mexico and Panama. Dr. Edward M. Nelson, of Stritch School of Medicine, Loyola University, has been studying the anatomy of the swim bladder and inner ear of fishes.



Three crowned cranes and a whale-headed stork dominate the exhibit in Hall 20 of marsh birds of the Upper Nile collected by the Buchen Expedition to East Africa (scene is on the Upper Victoria Nile where it broadens into marshy Lake Kyoga).

In the Division of Insects effective support of all branches of work was given by Curator Emeritus William J. Gerhard, whose meticulous care of the pamphlet collection has made this a useful tool of research for the staff and for visiting entomologists (his principal work has been with transfer of the Strecker Collection of moths and butterflies to steel-case storage trays). Dr. Charles H. Seevers, Research Associate, has largely completed revision of his manuscript on the termitophilous staphylinid beetles of the world, to which large additions were made by the study of specimens in the Bernhauer Collection, purchased in 1951. He contributed about fifty days to the integration of this material into our collections and by the end of the year had transferred to unit trays more than 90,000 specimens (about 11,000 species), adding Bernhauer Collection pin labels to each specimen and reorganizing the collection in new drawers and cabinets. It is expected that there will be about 2,000 more described species and perhaps 1,000 undescribed ones in the remaining part of this collection. It is hoped that the transfer may be completed in 1954. Curator Rupert L. Wenzel spent two weeks at eastern museums studying types of beetles of the family Histeridae. Associate Curator Henry S. Dybas, who was engaged mainly in collecting and labeling the minute beetles of the family Ptiliidae and preparing specimens for future study, made field trips



This crane fly (enlarged 5 times) is from the collection of insects in Baltic amber acquired by the Museum (note perfect preservation of details of wing venation).

to the Kankakee dunes area (where a large series of an undescribed scarab beetle was obtained), Lake Superior region of Upper Michigan, Great Smoky Mountains, and Louisiana and Mississippi. August Ziemer, Assistant, continued throughout the year his work of preparing insect specimens. Miss Lillian A. Ross, Associate, continued her studies of local and exotic spiders and, in addition, experimented with photographic and exhibition techniques for the study of spiderwebs.

In the Division of Lower Invertebrates there has been a continuing flow of specimens of land and fresh-water mollusks from South America from various sources. Their identification and study by Curator Fritz Haas has led to the description of numerous new species. During August and September he made a field trip to the Pacific Coast, working especially at the Pacific Biological Station at Nanaimo, on Vancouver Island, and in the redwood region of the northern part of California.

The major research of the Division of Vertebrate Anatomy again centered on the giant panda and related carnivores. The major problem during the year was formulation of a system for evaluating morphological data that will give an insight into the mechanism whereby structures of use to the organism are produced in evolution. This involves developing a distinctive approach to comparative anatomy, using the giant panda as a test case for new ideas and methods. Curator D. Dwight Davis continued his work on a report on the mammals collected by the Borneo Zoological Expedition of 1951, the scope of which work was extended to include new material received during the year. Study of the placenta and fetal membranes of the white shrew of Borneo by Curator Davis and Dr. Waldemar Meister, Associate, was completed during the year. William D. Turnbull, Preparator in the Department of Geology, continued his study of adaptive radiation in the masticatory musculature of mammals, which is of extreme importance to an understanding of the bony framework by means of which the muscles operate. Dr. R. M. Strong, Research Associate, continued his studies of the anatomy of birds and salamanders. Mrs. Dorothy B. Foss, Osteologist, prepared skeletons for the reference collection throughout the year, work of interdepartmental value.

Curator Davis engaged also in natural-history studies in the local field and, with the aid of Miss Harriet Smith, of Raymond Foundation, and Assistant Brodie, made a connected sequence of motion pictures to be used by Raymond Foundation to introduce children to the animal life of the Chicago region. He prepared, in addition, a 400-foot motion picture (in color) reviewing the biology of the lizards known as chameleons, animals that are remarkable for their specialized adaptations to feeding and locomotion. The specimens for this film were received at the Museum by air-express from Madagascar. Miss Margaret G. Bradbury, Artist in the Department of Zoology, prepared drawings of coral snakes, fish larvae and fish skulls, and beetles, all for publication in papers by members of the staff of the department.

Accessions—Zoology

The purchase of the A. F. Kohlman Collection of insects in Baltic amber amounting to 2,500 specimens is a unique event in the history of the Museum. The collection, obtained from F. E. Trinklein, science teacher at Lutheran High School, Racine, Wisconsin, is the second most important collection of these fossils in the New World,

the largest being in the Museum of Comparative Zoology at Harvard University. Among fossil animals, these ancient insects of about thirty-five million years ago are unique in the perfection of their preservation, which makes it possible to assign them with great accuracy in the system of classification and to relate them to modern forms. Thus they are highly significant in studies of the evolution and of the zoogeography of living insects. The world-wide collection of termites, presented by Dr. Alfred E. Emerson, Research Associate in the Division of Insects, contains approximately 6,500 specimens of 552 species, about 175 of which are represented by type material. The importance to research of such a collection, assembled by the leading authority on the group, is emphasized by the fact that this collection ranks as the fourth or fifth most comprehensive collection of termites in the world. A collection of 80 specimens of crocodilians, which includes one type and 20 paratypes of a new form discovered in Colombia, was presented by Dr. Frederick J. Medem (see page 53). Chief Curator Schmidt has long been interested in this group of animals and by personal efforts in Central America, South America, New Guinea, and the Philippines has built up the Museum's study collection. The gift of the Medem material thus makes the Museum's collection of crocodiles, caimans, and alligators one of the richest in the world. Dr. Harald Sioli, of Belem, Brazil, presented, as in previous years, interesting fresh-water mollusks from regions never before visited by a collector. The generous gift of mammals, birdskins, reptiles, and amphibians from Field Associate Harry Hoogstraal, who is stationed in Cairo, Egypt, includes the first considerable lot of mammals from Turkey to be received by any museum in the United States.

One of the programs of the Division of Insects most profitable in scientific results is informal and intradepartmental. This is the program, participated in by the vertebrate zoologists, of collecting the ectoparasites of birds, mammals, and reptiles while on expeditions. The staff of the Division of Mammals has been notably co-operative, and as a result of their efforts we have acquired a large number of lice, fleas, parasitic batflies, mites, and ticks, many of them rare or new. We feel that this co-operation is of particular importance, because our field personnel are frequently in a position to collect in areas that are relatively inaccessible or that have restrictions on collecting that bar the non-museum naturalist. Further, the entomologist who is interested in the study of these ectoparasites rarely has the training, facilities, or opportunities (unless he is associated with a public-health organization) that are necessary to collect, preserve, and identify the hosts and parasites. Hence

the collecting of these parasites by Museum zoologists not only helps make known many forms that are of great biological interest (frequently of potential medical importance, as well) that would otherwise remain unknown for many years but also insures preservation of the host animal for future verification of its identity, a matter of primary concern in parasitology.

Exhibits—Zoology

The original plan of Hall 20 (Habitat Groups of Birds) called for an exhibit showing the Upper Nile with the characteristic marsh-birds of its vast papyrus-covered lake shores and swamps. This plan at last has been realized, largely because of the active interest of Walther Buchen, Trustee of the Museum, whose expedition to the Lake Kyoga region of East Africa was reported in 1952 (see Annual Report, page 30). The Nile marsh-bird exhibit fully realizes the function of a museum habitat-group—life-like representation of an important natural habitat with an aggregation of animals in natural association. Taxidermist Ronald J. Lambert made a film showing stages in construction and installation of the exhibit in the Museum, which supplements the film-record made in the field by Mr. Buchen of collecting the birds and accessories. Thus the Museum has for the first time the invaluable record from start to finish of one of its most characteristic operations, the making of a habitat group. In addition to his work on the Nile group Carl W. Cotton, Taxidermist, made progress on panels for the synoptic exhibits.

The habitat group of sea otters in an Aleutian setting was completed early in the year and installed in the Hall of Marine Mammals (Hall N). Specimens for this group (a male, female, and pup), obtained by Curator Sanborn in 1952 through co-operation of the United States Fish and Wildlife Service, were mounted and accessories prepared by Taxidermist Frank C. Wonder, with background by Douglas E. Tibbitts, Illustrator, and L. L. Pray (formerly of the Museum staff). Preparation of the habitat group of Malay tapirs by Taxidermist Leon L. Walters was well advanced at the end of the year, as was work on artificial vegetation and background in the alcove in William V. Kelley Hall (Hall 17, Asiatic Mammals) where the tapirs are to be exhibited. Taxidermist Lambert reinstalled four exhibits in Albert W. Harris Hall (Hall 18, Reptiles, Amphibians, and Insects), and a fresh mold and color notes of the remarkable tuatara were made possible by a fresh specimen of this lizard-like reptile of New Zealand that was received from the Chicago

Zoological Society. Two new models of fishes (dolphin and pointed-tailed sunfish) were completed by Taxidermist Wonder for Hall O. An exhibit to illustrate the biology of the marsupials and monotremes, being prepared by Artist Joseph B. Krstolich and other members of the staff, was in an advanced stage at the end of the year. This work represents the initiation of a program of greatest importance to Hall 15 (Mammals in Systematic Arrangement)—preparation of anatomical models, mounted specimens, maps, and other materials to show what is interesting and important about the animals in the hall and to explain the meaning of their classification. This major project, which involves the comparative anatomy of mammals, is under the supervision of Curator Davis.

A family group of rare northern sea otters from the Aleutians is shown in Hall N.



LIBRARY OF THE MUSEUM

In order that the Library of the Museum may fulfill its primary function of serving members of the Museum staff and other research workers adequately, its policy of acquisition has been carefully planned so that a comprehensive representation of scientific literature in the natural sciences may be provided. During the past year many desiderata were obtained (see a selected list on page 97).

The Museum gratefully acknowledges gifts of books, pamphlets, and periodicals presented by individuals and by institutions. We are especially grateful to Langdon Pearse of Winnetka, Illinois, for his outstanding contribution of books on botany and zoology, to the Container Corporation of America for its excellent publication *World Geo-Graphic Atlas*, to the Chicago Historical Society for *Conchology, or the Natural History of Shells* by George Perry, and to John Crerar Library for co-operation in contributing to the Museum Library the *Concilium Bibliographicum* covering the natural sciences. The extremely comprehensive work, *Photomicrographs of Meteoric Irons* (volumes 8 and 9), so generously contributed by Stuart H. Perry, is of inestimable value to the geology division of the Library. We are equally indebted to other donors (see page 97) for their genuine interest in the Library as shown by their gifts.

A total of 1,872 volumes was added to the collection by purchase, gift, and exchange. The number of volumes withdrawn under reclassification totaled 466, including duplicates and books not needed by the Library. Some of this material was exchanged for wanted items or sold and the proceeds added to the annual book-budget. During the year the Library concluded the sale (through competitive bids) of duplicate volumes from the collection of ornithological literature bequeathed to the Library by the late Boardman Conover, Trustee of the Museum and Research Associate in the Division of Birds, and added the proceeds to the Conover Game-Bird Fund.

The re-establishment of the Division of Asiatic Archaeology and Ethnology brings with it new demands on the Library's resources. Arrangements have been made with sources in Hong Kong for Chinese publications, Japanese publications are already being received by purchase and through exchange, and, if there is further need for Asiatic publications, additional sources may have to be discovered. The important work of cataloguing the vast collection of Orientalia, bequeathed to the Library by the late Dr. Berthold Laufer, has been held in abeyance because of the urgency of first completing the reclassification of the Library's main collection according to the Library of Congress system and because Library of Congress cards

for books in the Chinese and Japanese languages have not been available. The question of standardizing the cataloguing of such publications has been referred by the Library of Congress to the Division of Cataloguing and Classification of the American Library Association, and it is hoped that printed cards will be available by the time that the work of classifying this entire collection is undertaken. Classification of selected material from the Laufer bequest will be performed concurrently, during the coming year, with the regular reclassification. Assistance in this difficult task has been assured the Library by M. Kenneth Starr, Curator of Asiatic Archaeology and Ethnology, who has kindly offered to work in close co-operation on this project with the cataloguing department.

During the year 4,709 volumes were classified and 18,650 cards were added to the catalogue, which brings the total number of volumes under the Library of Congress classification to 40,993. The new card-catalogue is represented by the inclusion of 104,015 cards. In addition, monographs during the year were covered by 1,547 analytics. Inasmuch as reclassification is performed concurrently with cataloguing and classification of incoming material, it is estimated that the program of reclassification may reach completion in another five to seven years.

Work in the preparation of material for binding has gone well. The major portion of the collection in the Library consists of serial publications, which, in fact, make up the most important part of the collections of any research library because they serve to disseminate important and timely information rapidly. Much of the data in periodical literature is continued in subsequent issues and so serials should be kept together in bound volumes. However, before such material is sent to a commercial bindery, many mechanical steps are necessary. In our Library, where the bulk of material to be bound consists of serials in foreign languages, the instruction slips accompanying each volume must be carefully prepared. All volumes are examined to determine that no pages are missing or mutilated. If title pages, tables of contents, and indexes are lacking, they are acquired from the publisher, and decision must be made whether supplements are to be bound in as paged or at the end of the volume. The bindery is furnished with proper instructions for panel positions and form of essential information to be printed on the spines of the volumes, and, in order to maintain uniformity for serial publications, color charts are kept. The fact that not one volume in the entire lot prepared for binding during this past year has been returned for correction has reduced the cost of binding considerably. During the year 1,478 volumes were bound.

Records in the reading room show the actual use of 2,908 volumes as specifically requested by Museum patrons. The many telephone calls recieved weekly from outside the building by the reference librarian indicate recognition of the Library's research facilities and show the importance of this service. Many inquiries, both from outside the Museum and from patrons visiting the Library, require assiduous research. One hundred and seventy-seven pieces of correspondence were received in the Library for translation into English. The service of interlibrary loans continues to occupy a considerable portion of the Library's program. During the year, 110 volumes were borrowed and 128 lent. Substitution of microfilm and photostats for material difficult to obtain was increased because this eliminated reloading and reborrowing needed material. The Museum gratefully acknowledges the courtesy and co-operation of all libraries participating in this service. The Library continues to be engaged with the Division of Publications in a review of all agreements for exchange of publications made before 1947 with other institutions or individuals in order to bring the lists of publications exchanged up to date. Important new agreements are being established at home and abroad so that timely data covering the developments and results of scientific progress in the Museum's areas of interest may be provided.

PHOTOGRAPHY AND ILLUSTRATION

During the year Douglas E. Tibbitts, Staff Illustrator, worked into an entirely new field. With the assistance of Leon L. Pray, who had recently retired from the staff of the Museum, he prepared backgrounds for the sea-otter exhibit and for the splendid Nile marsh-bird group and made a beginning on the background for the exhibit of Malay tapirs, which should be completed next year (see page 59). In the regular routine of his work he prepared illustrations for Curator Donald Collier's report on the Viru Valley of Peru, for Curator Bryan Patterson's study on early Cretaceous mammals, and for two series of "Museum Stories" by members of Raymond Foundation. In addition, of course, were the usual requirements for maps, labels, and various other illustrations. Increased demands on the Division of Photography were reflected in the total of 21,395 negatives, prints, enlargements, and lantern slides prepared during the year. The growing need of publishers of textbooks and other reference works for good illustrative material is being met through the facilities of the Museum.

PUBLICATIONS AND PRINTING

A total of 21,763 publications of the Museum was sent to other scientific institutions during the year in exchange for their publications, and fifteen new agreements for exchange were established (see page 63). Sales of publications were the highest in the history of the Museum, fifteen per cent greater than the previous year. The number of publications sold was 49,641.

The Museum printed during the year twenty-three publications in its scientific series, two (one reprint) in its popular series, one in its memoirs series, one in its technical series, one annual report, and one index to volumes. The total number of copies printed was 39,515, of which 38,615 copies were printed by letterpress, with a total of 1,248 pages of type composition, and 900 copies were printed by the Vari-type-offset process, with a total of 230 pages of Vari-type composition. Twelve numbers of Chicago Natural History Museum *Bulletin* were printed, averaging 6,050 copies an issue. Other work by letterpress included posters, price lists, lecture schedules, Museum labels, post cards, Museum stationery, and specimen tags, totaling 882,199 impressions. Two series of "Museum Stories" and miscellaneous work by the Vari-type-offset process totaled 596,384 impressions.

The following publications were issued by Chicago Natural History Museum during 1953:

DEPARTMENT OF ANTHROPOLOGY

BRAIDWOOD, ROBERT J.

Prehistoric Men, Popular Series, Anthropology, no. 37, 118 pages, 28 illustrations (reprint)

ROWELL, ALFRED LEE

A New Method of Making Foliage for Miniature Dioramas, Fieldiana: Technique, no. 7, 9 pages, 5 illustrations

THOMPSON, J. ERIC S.

The Civilization of the Mayas, Popular Series, Anthropology, no. 25, 98 pages, 37 illustrations

DEPARTMENT OF BOTANY

AMES, OAKES, AND DONOVAN STEWART CORRELL

Orchids of Guatemala, Fieldiana: Botany, vol. 26, no. 2, 432 pages, 91 illustrations

STEYERMARK, JULIAN A., AND COLLABORATORS

Contributions to the Flora of Venezuela, Fieldiana: Botany, vol. 28, no. 3, 230 pages, 51 illustrations

DEPARTMENT OF GEOLOGY

DENISON, ROBERT H.

Early Devonian Fishes from Utah, Part II, Heterostraci, Fieldiana: Geology, vol. 11, no. 7, 67 pages, 24 illustrations

MCGREW, PAUL O.

A New and Primitive Early Oligocene Horse from Trans-Pecos Texas, Fieldiana: Geology, vol. 10, no. 15, 5 pages, 1 illustration

ROY, SHARAT KUMAR, AND ROBERT KRISS WYANT

Fresh-water Limestone from the Torola Valley, Northeastern El Salvador, Fieldiana: Geology, vol. 10, no. 16, 19 pages, 15 illustrations

ZANGERL, RAINER

The Vertebrate Fauna of the Selma Formation of Alabama. Part III, The Turtles of the Family Protostegidae. Part IV, The Turtles of the Family Toxochelyidae, Fieldiana: Geology Memoirs, vol. 3, nos. 3 and 4, 249 pages, 4 plates, 43 illustrations

DEPARTMENT OF ZOOLOGY

BAISAS, FRANCISCO E., AND PABLO FELICIANO

Philippine Zoological Expedition, 1946-1947, Notes on Philippine Mosquitoes, XIII, Four New Species of Zeugomyia and Topomyia, Fieldiana: Zoology, vol. 33, no. 3, 21 pages, 5 illustrations

BLAKE, EMMET R.

A Colombian Race of Tinamus osgoodi, Fieldiana: Zoology, vol. 34, no. 18, 2 pages

DAVIS, D. DWIGHT

Behavior of the Lizard Corythophanes cristatus, Fieldiana: Zoology, vol. 35, no. 1, 14 pages, 10 illustrations

HAAS, FRITZ

Mollusks from Ilha Grande, Rio de Janeiro, Brazil, Fieldiana: Zoology, vol. 34, no. 20, 7 pages, 4 illustrations

INGER, ROBERT F.

A New Fish from North Borneo, Genus Tetraodon, Fieldiana: Zoology, vol. 34, no. 11, 4 pages, 1 illustration

MARX, HYMEN

A New Worm Snake from Colombia, Genus Anomalepis, Fieldiana: Zoology, vol. 34, no. 17, 2 pages

The Elapid Genus of Snakes, Walterinnesia, Fieldiana: Zoology, vol. 34, no. 16, 8 pages, 4 illustrations

MEISTER, WALDEMAR, AND D. DWIGHT DAVIS

Placentation of a Primitive Insectivore, Echinorex gymnura, Fieldiana: Zoology, vol. 35, no. 2, 30 pages, 24 illustrations (1 two-color)

RAND, AUSTIN L.

A New Barbet from French Indo-China, Fieldiana: Zoology, vol. 34, no. 21, 2 pages

Notes on Flycatchers of Genus Batis, Fieldiana: Zoology, vol. 34, no. 10, 16 pages

RAND, AUSTIN L., AND ROBERT L. FLEMING

A New Fruit Pigeon from Nepal, Fieldiana: Zoology, vol. 34, no. 19, 2 pages

DEPARTMENT OF ZOOLOGY (*continued*)

SANBORN, COLIN CAMPBELL, AND HARRY HOOGSTRAAL

Some Mammals of Yemen and Their Ectoparasites, Fieldiana: Zoology, vol. 34, no. 23, 24 pages

SCHMIDT, KARL P.

Amphibians and Reptiles of Yemen, Fieldiana: Zoology, vol. 34, no. 24, 9 pages, 1 illustration

A Visit to Karewa Island, Home of the Tuatara, Fieldiana: Zoology, vol. 34, no. 12, 12 pages, 4 illustrations

Hemprich's Coral Snake, Micrurus hemprichi, Fieldiana: Zoology, vol. 34, no. 13, 6 pages, 2 illustrations

The Amazonian Coral Snake, Micrurus spixi, Fieldiana: Zoology, vol. 34, no. 14, 10 pages, 3 illustrations

SOLEM, ALAN

Marine and Fresh-water Mollusks of the Solomon Islands, Fieldiana: Zoology, vol. 34, no. 22, 15 pages

TRAPIDO, HAROLD

A New Frog from Panama, Fieldiana: Zoology, vol. 34, no. 15, 7 pages, 2 illustrations

ADMINISTRATIVE PUBLICATIONS

Report of the Director to the Board of Trustees for the Year 1952, 138 pages, 22 illustrations

This view of the exhibition cases in Charles F. Millspaugh Hall shows branches of various species that are being added to the exhibits of North American trees.

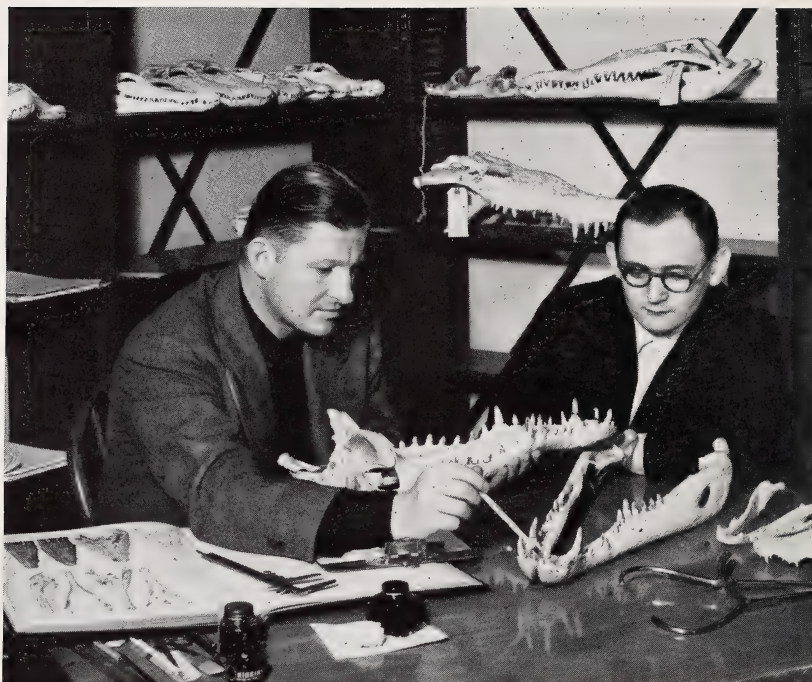


CO-OPERATION WITH OTHER INSTITUTIONS

Research projects in which the Museum has been co-operating with other scientific institutions include a wide variety of activities. Some of them, undertaken in co-operation with museums and universities throughout the world, are mentioned in the reports of our scientific departments. Also, the ever-increasing importance of the Museum's scientific collections is clearly indicated by the increasing number of notable scholars who come here from all over the world for study (see reports of the scientific departments for names of some of them). The imposing lists of visitors to the Department of Botany and the Department of Zoology, particularly, emphasize the fact that the important collections assembled by the great museums of the world are in every sense study-collections and not merely material in storage.

Prince Akihito of Japan was an honored visitor at the Museum during his stay in Chicago on his recent tour of the United States. Dr. Bruno Molajoli, Director of Fine Arts for the District of Campania, Italy, and Mrs. Molajoli spent a day at the Museum in surveying the exhibits and in conferring with members of the staff. Miss Katharine Bartlett visited the Museum to study the methods of organizing and classifying books in our Library in preparation for a new library at the Museum of Northern Arizona. George B. Thompson, Keeper of the Division of Ethnography, Belfast Municipal Museum and Art Gallery, Belfast, Ireland, who was in the United States on a Fulbright Fellowship, came to Chicago for the sole purpose of studying our museum and exhibition techniques in anthropology and spent four months here that were very profitable to us as well as to him. Professor H. Stübel, of Erlangen University in Bavaria, Germany, student of non-Chinese peoples of China who also was here on a Fulbright Fellowship, spent several months in intensive study of our collections and of material in our Library. Among others who used the anthropological study-collections were John C. Ewers, United States National Museum; Dr. Jorge Lines, University of Costa Rica; Donald Marshall, Peabody Museum; and Dr. George K. Newmann, Indiana University.

Botanists from other institutions who visited the Museum for consultation or study include Professor J. Lanjouw, Utrecht, Netherlands; Dr. Karl Rechinger, Natural History Museum, Vienna; Dr. Amar Joshi, Jullundur, India; Dr. John D. Dwyer, St. Louis University; Dr. Charles Thom, Port Jefferson, New York; Dr. George H. Coons, United States Department of Agriculture; Dr. Chester A. Arnold, Dr. Rogers McVaugh, and Dr. Warren H. Wagner, Uni-



Dr. Frederick J. Medem, from Colombia, studies South American crocodilians in the Museum laboratories (Hymen Marx, Assistant, Division of Reptiles, at right).

versity of Michigan; Dr. Pedro S. Coronado, University of San Marco, Lima, Peru; Dr. and Mrs. Louis O. Williams, Escuela Agrícola Panamericana, Tegucigalpa, Honduras; Felix McBryde, United States Bureau of Census; Dr. Leonard R. Wilson, University of Massachusetts; Boughton Cobb, New Haven, Connecticut; Dr. Vladimir Krajina, University of British Columbia; Dr. Finnur Gudmundsson, Reykjavik, Iceland; Dr. William Spackman, Pennsylvania State College; Dr. Sidney Glassman and Dr. Paul C. Silva, University of Illinois; Dr. Aaron J. Sharp, University of Tennessee; Dr. Chester S. Nielsen and Dr. Grace C. Madsen, Florida State University; Dr. Conrad V. Morton and Dr. E. P. Killip, United States National Museum; Dr. Hugh Iltis and Dr. Dwight H. Moore, University of Arkansas; Dr. Bassett Maguire, New York Botanical Garden; Dr. Richard W. Holm, Stanford University; Dr. Edgar T. Wherry, University of Pennsylvania; Dr. Emery H. Moore and Dr. Richard P. Korf, Cornell University; Dr. Wilbur Duncan,

University of Georgia; Dr. Ralph A. Lewin, Halifax, Nova Scotia; Dr. Olav Gjaerevoll, Trondheim, Norway; Dr. Tobias Lasser, Caracas, Venezuela; John Thomas Howell, California Academy of Sciences; Dr. Robert Thorne, University of Iowa; George A. Huggins, Baltimore; Dr. Franz Ippisch, Guatemala City; Dr. Alfred F. Traverse, United States Bureau of Mines; Oren C. Durham, Abbott Laboratories; Dr. George B. Cummins, Purdue University; Dr. G. F. Frankton and Dr. William G. Dore, Department of Agriculture (Canada); Dr. Mary Belle Allen, Hopkins Marine Station; Dr. Daniel T. Jackson, United States Army Corps of Engineers; Dr. Maxine Larisey, Medical College of the State of South Carolina; Dr. William A. Cassel, School of Medicine, University of Pennsylvania; Dr. Herman Silva Forest, College of William and Mary; Dr. Albert W. Herre, University of Washington; Dr. Robert F. Burrow, Marine Laboratory, University of Miami; Dr. Angel Maldonado, Laboratorios Maldonado, Lima, Peru; Dr. T. V. Desikachary, University of Saugor, Saugor, India; Dr. Fred A. Barkley, Nepera Chemical Company; Dr. Eula Whitehouse, Southern Methodist University; Dr. Elva Lawton, Hunter College; Dr. Lee Bonar, University of California; Dr. C. C. Palmiter, Richland, Washington; Dr. Ivan L. Ophel, Chalk River, Ontario; Dr. John D. Dodd, Iowa State College; Dr. Asbjörn Ousdal, Micro-fossil Laboratory; Dr. Teofilo Herrera, University of Mexico; Norman W. Radford, McMaster University, Hamilton, Ontario; and William Bridge Cooke, United States Health Center, Cincinnati.

Dr. Tor Orvig, of Naturhistoriska Riksmuseet, Stockholm, Sweden, spent several weeks studying the collections of primitive fishes in the Department of Geology and discussing problems of their history with Dr. Robert H. Denison, Curator of Fossil Fishes. Dr. T. M. Stout, of Nebraska State Museum, University of Nebraska, paid a brief visit to look at fossil beavers, and Dr. Claude W. Hibbard came from University of Michigan to examine Pleistocene rodents. Dr. Henry Anson Wylde and Dr. Hildegard Howard, of Los Angeles County Museum, visited our Museum to study exhibition techniques in paleontology.

Visiting zoologists who consulted with the staff or spent some time in examination of our zoological collections include Dr. Oliver P. Pearson and Dr. Carl Koford, University of California; Dr. G. E. Erikson, Harvard Medical School; Carlos Bumzham, Dr. E. L. Du Brul, Dr. D. F. Hoffmeister, T. E. Moore, and R. B. Selander, University of Illinois; Mr. and Mrs. Sydney Anderson, Dr. Rollin Baker, and Dr. E. R. Hall, University of Kansas; E. V. Komarek, Birdsong Plantation, Thomasville, Georgia; Salim Ali,

Bombay Natural History Society, Bombay, India; Jean Delacour, Los Angeles County Museum; Byron E. Harrell, University of Minnesota; William H. Phelps, Caracas, Venezuela; Dr. Finn Salomonsen, Copenhagen, Denmark; Dr. Charles G. Sibley, Cornell University; Dr. Alexander Wetmore, United States National Museum; Dr. Georg Haas, Hebrew University, Jerusalem, Israel; Dr. Walter C. Brown and Dr. Orlando Park, Northwestern University; Jay Savage, Stanford University; Dr. Sherman A. Minton, Jr., Medical Center, Indiana University; Dr. Robert R. Miller, Dr. Robert W. Storer, Alan Solem, and W. R. Taylor, Museum of Zoology, University of Michigan; Henry Hildebrand, University of Texas; Dr. R. L. Araujo, Instituto Biologico, São Paulo, Brazil; Dr. Joseph Camin, Chicago Academy of Sciences; Dr. Sidney Camras, Chicago; Dr. Ashley B. Gurney, United States Department of Agriculture; Dr. E. S. Ross, California Academy of Sciences; Harold Hansen, Dr. Herbert H. Ross, and Lewis Stannard, Illinois Natural History Survey; Martin Brown, D. F. Hardwick, R. Lambert, J. F. McAlpine, L. A. Miller, S. G. Walley, and H. B. Wressell, Department of Agriculture (Canada); Dr. F. Monros, Instituto Miguel Lillo, Tucumán, Argentina; Father Albright, Stritch School of Medicine, Loyola University; William J. Beecher, Chicago; and Dr. J. Linsley Gressitt, Yoshida Kondo, and Donald Mitchell, Bernice P. Bishop Museum, Honolulu. Dr. Ortrud Schuster, of Senckenberg Museum in Frankfurt-am-Main and of Instituto Tropical de Investigaciones Cientificas in San Salvador, spent two months in our Museum under the supervision of D. Dwight Davis, Curator of Vertebrate Anatomy, preparing cleared specimens of lizards for her study of the mechanics of locomotion.

Several members of our scientific staff devote a portion of their time to lecturing and to supervising the studies of graduate or undergraduate students who carry on special studies at the Museum. George I. Quimby, Curator of Exhibits in Anthropology, gave a seminar on Eskimo ethnology and prehistory at the Museum for the University of Chicago during the winter quarter and, with Donald Collier, Curator of South American Archaeology and Ethnology, gave a course on the ethnology of North and South America at the University of Chicago during the spring quarter. Dr. Theodor Just, Chief Curator of Botany, conducted a seminar at the University of Notre Dame; Dr. Karl P. Schmidt, Chief Curator of Zoology, gave four lectures at Hebrew University, Jerusalem, Israel; Robert F. Inger, Assistant Curator of Fishes, lectured at the University of Chicago; and Curator Davis gave a series of four lectures at California Institute of Technology.



The quite inoffensive common American tarantula that is pictured above lives so very well in captivity that it lends itself admirably to studies of spider behavior.

Individual students from De Paul University, University of Chicago, Chicago Teachers College, National College of Education, North Central College, Northwestern University, Roosevelt College, Valparaiso University, and Wheaton College as well as from more distant colleges and universities used the Museum as a source of information, and various classes (for example, the large group from McMaster University, Hamilton, Ontario) visited the scientific departments and inspected the laboratories, workrooms, and herbaria. Art schools, among them Academy of Applied Arts, Chicago Academy of Fine Arts, Institute of Design, and School of the Art Institute of Chicago, use the Museum regularly for supervised study and class work, and in the summer the Museum presents a special showing in Stanley Field Hall of work by students from the School of the Art Institute.

For its co-operation in a study-work-and-earn plan for college students, our Museum was awarded a certificate of recognition by Antioch College, Yellow Springs, Ohio. Students at Antioch College divide their school year between periods of formal classroom work on the campus and on-the-job training in factories, business offices, and institutions all over the country. The Museum has been participating in this program since 1946 and, under this co-operative plan, has given temporary employment to seventy-two students during the past eight years. Fourteen young men and women from Antioch College were employed by the Museum in 1953 in its scientific departments and Library.

ACTIVITIES OF STAFF MEMBERS IN SCIENTIFIC SOCIETIES

In order to be abreast of scientific research in allied institutions it is essential that members of our scientific staff keep closely in touch with the scientific societies working in their fields of interest. Our Museum is always well represented at the annual meetings of the societies, and our staff members carry their full share of the duties and responsibilities of membership.

Dr. Paul S. Martin, Chief Curator of Anthropology, Donald Collier, Curator of South American Archaeology and Ethnology, and Miss Elaine Bluhm, Assistant in Archaeology, attended the annual meetings of the American Anthropological Association in Tucson, Arizona, where Chief Curator Martin and Curator Collier presented papers. Dr. John B. Rinaldo, Assistant Curator of Archaeology, George I. Quimby, Curator of Exhibits, Curator Collier, and Assistant Bluhm attended concurrent meetings in Urbana, Illinois, of the Society for American Archaeology (of which Curator Quimby was elected first vice-president) and the Central States Anthropological Society (of which Curator Collier was elected president). Chief Curator Martin and Assistant Curator Rinaldo attended the Pecos Conference on Southwestern archaeology at the Museum of Northern Arizona at Flagstaff.

Dr. Theodor Just, Chief Curator of Botany, presided at a symposium on "Taxonomy, Ecology, and Stratigraphy of Tertiary Angiosperms" sponsored by the Paleobotanical and the Systematic sections of the Botanical Society of America and co-sponsored by the American Society of Plant Taxonomists and the Society for the Study of Evolution at the annual meetings of the American Institute of Biological Sciences in Madison, Wisconsin (he was elected vice-president for 1954 of the Society for the Study of Evolution). He attended meetings of the Divisional Committee of Biological Sciences of the National Science Foundation in Washington and served as chairman of the Committee on Paleobotany of the Division of Earth Sciences of the National Research Council, as chairman of the Committee on Generic Synopses appointed by the American Society of Plant Taxonomists, and as a member of the Committee on Guidance appointed by the Botanical Society of America. Dr. José Cuatrecasas (see page 40) also attended the annual meetings of the American Institute of Biological Sciences. Dr. Earl E. Sherff, Research Associate in Systematic Botany, presided as chairman of the Linnaean Symposium, sponsored by the American

Society of Plant Taxonomists and Systematic Section of the Botanical Society of America as part of the meetings of the American Institute of Biological Sciences.

Dr. Sharat K. Roy, Chief Curator of Geology, Bryan Patterson, Curator of Fossil Mammals, and Robert K. Wyant, Curator of Economic Geology, attended the annual meetings in Boston of the American Association for the Advancement of Science, where Curator Patterson read a paper on the history of non-hominid primates in the Old World and where Chief Curator Roy and Curator Wyant, in a symposium on origin of meteorites, presented a paper (illustrated by color-slides) on the composition, structure, and probable origin of chondrules in stony meteorites. The three men also attended the meetings in Toronto of the Geological Society of America, and Curator Patterson and Curator Wyant attended the concurrent meetings of the Society of Vertebrate Paleontology. Curator Patterson, with Orville L. Gilpin, Chief Preparator of Fossils, Preparator William D. Turnbull, and Assistant Priscilla F. Turnbull, took part in a field conference of the Society of Vertebrate Paleontology in Uinta Basin, Utah. Eugene S. Richardson, Jr., Curator of Fossil Invertebrates, attended the meetings of the North Central Branch of the Entomological Society of America in St. Louis, of the Pennsylvania Academy of Science in Annville, and of the Illinois Academy of Science in Macomb and presented technical papers at each meeting.

Dr. Karl P. Schmidt, Chief Curator of Zoology, represented the Museum and the National Research Council at the Fourteenth International Congress in Copenhagen in August, where he served as chairman of the section on zoological nomenclature. Mrs. Marion Grey, Associate in the Division of Fishes, who had been invited to attend the Congress to take part in a colloquium on problems of the deep sea, spoke on fishes found below two thousand meters. In November Dr. Austin L. Rand, Curator of Birds, represented the Museum at the Eighth Pacific Science Congress in Manila. Colin Campbell Sanborn, Curator of Mammals, attended the meetings of the American Society of Mammalogists held in New York, where he was elected a director and appointed chairman of the committee on nomenclature. Loren P. Woods, Curator of Fishes, Robert F. Inger, Assistant Curator of Fishes, and D. Dwight Davis, Curator of Vertebrate Anatomy, attended the annual meetings in New York of the American Society of Ichthyologists and Herpetologists, where Curator Woods was elected a member of the joint committee of the Society and the American Fisheries Society on common names of fishes, and where Curator Davis was



Cleaning and painting Stanley Field Hall and adjacent vistas were undertakings of such magnitude that a special working crew as well as scaffolding was needed.

appointed chairman of the publication committee for the Society's new edition of *A Check List of Amphibians and Reptiles*. Curator Woods and Assistant Curator Inger attended also the meetings in Macomb of the Illinois Academy of Science and a conference on research in the Upper Lakes held at Douglas Lake, Michigan. Curator Davis was invited to present a paper as part of a symposium conducted by Section H during the meetings in Boston of the American Association for the Advancement of Science, and he also attended the meetings at the College of Medicine, University of Illinois, of regional anatomists. Henry S. Dybas, Associate Curator of Insects, and Dr. Charles H. Seevers, Research Associate, attended the meetings in St. Louis of the North Central Branch of the Entomological Society of America, and Rupert L. Wenzel, Curator of Insects, attended the meetings in Philadelphia of the Eastern Branch of the Society. Dr. Fritz Haas, Curator of Lower Invertebrates, represented the Museum at the meetings in Lawrence, Kansas, of the American Malacological Union.

Miss Miriam Wood, Chief of the James Nelson and Anna Louise Raymond Foundation, attended the meetings in Buffalo of the American Association of Museums and presented before the International Relations Section a report on the international seminar on the role of museums in education that was sponsored by UNESCO in 1952 (Miss Wood was chairman of the delegation representing the United States in the seminar). Miss Wood and Miss Harriet Smith, Guide-Lecturer of Raymond Foundation, attended meetings in Chicago of the Educational Film Library Association and the National Audio-Visual Association. As usual, the meetings in Chicago of the various professional library associations were attended by Mrs. Meta P. Howell, Librarian, and members of the staff of the Library.

Chief Curator Just continued as editor of *Lloydia* (quarterly journal of biological science published by Lloyd Library and Museum, Cincinnati), as editor of *Paleobotanical Report* (published by the Division of Earth Sciences of the National Research Council), and as member of the editorial board of *American Journal of Botany* (official publication of the Botanical Society of America). Dr. Rainer Zangerl, Curator of Fossil Reptiles, continued as foreign-news editor and Assistant Turnbull as a regional editor of the *Society of Vertebrate Paleontology News Bulletin*. Chief Curator Schmidt continued as a section editor of *Biological Abstracts* (published under the auspices of the Union of American Biological Societies) and as a consulting editor for *American Midland Naturalist* (published by the University of Notre Dame).

Publications of members of the scientific staff during 1953 besides those issued by Chicago Natural History Museum include the following articles and reviews in various journals:

DEPARTMENT OF ANTHROPOLOGY

COLLIER, DONALD

Review of *Red Man's America* (by Ruth M. Underhill), *The Art of Ancient Peru* (by Heinrich U. Doering), *Digging Beyond the Tigris* (by Linda Braidwood), *Amazon Town: A Study of Man in the Tropics* (by Charles Wagley), *Anthropology Today: An Encyclopedic Inventory* (edited by A. L. Kroeber), *The Primitive World and Its Transformations* (by Robert Redfield), in *The University of Chicago Magazine*, vol. 46, no. 2, pp. 22-23

MARTIN, PAUL S.

"Further Discoveries in Pine Lawn Valley," *Archaeology*, vol. 6, no. 4, pp. 217-220

RINALDO, JOHN B.

Review of *Excavations in Big Hawk Valley, Wupatki National Monument, Arizona* (by Watson Smith), in *El Palacio*, vol. 60, no. 4, pp. 161-163

DEPARTMENT OF BOTANY

CUATRECASAS, JOSÉ

"Neue und bemerkenswerte andine Compositen," *Feddes Repertorium*, vol. 55, no. 2-3, pp. 120-153

"New Taxa in the Genus *Diplostephium*," *Bulletin of the Torrey Botanical Club*, vol. 80, no. 5, pp. 401-408

"Senecioneae andinae novae," *Collectanea Botanica*, vol. 3, pp. 261-307

JUST, THEODOR

"Generic Synopses and Modern Taxonomy," *Chronica Botanica*, vol. 14, no. 3, pp. 103-114

Report of the Committee on Paleobotany, Number 23, mimeographed (Washington D.C.: National Research Council), 33 pages

"The Present Status of Plant Taxonomy," in *Conference on the Importance and Needs of Systematics in Biology*, mimeographed (Washington, D.C.: National Research Council), pp. 38-43

Review of *Geschichte der Pflanzen* (by Walter Zimmermann), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 290

Review of *Gray's Manual of Botany*, eighth (centennial) edition (by Merritt Lyndon Fernald), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 294

Review of *Grundlagen und Methoden einer Erneuerung der Systematik der Höheren Pflanzen* (by Franz Buxbaum), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 294

Review of *Lehrbuch der Allgemeinen Botanik. Band I. Morphologie, Anatomie und Vererbungslehre* (by Hermann Ullrich and August Arnold), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 293

Review of *Lehrbuch der Botanik für Hochschulen*, twenty-fifth revised edition (by Hans Fitting, Walter Schumacher, Richard Harder, and Franz Firbas), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 293

Review of *Native Orchids of North America—North of Mexico* (by Donovan Stewart Correll), in *Quarterly Review of Biology*, vol. 28, no. 3, p. 295

SHERFF, EARL E.

"Further Notes on the Genus *Tetraplasandra* A. Gray (fam. Araliaceae) in the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 8, pp. 2-13

"Further Notes upon the Flora of the Hawaiian Islands," in *Botanical Leaflets* (published by the author), no. 9, pp. 1-10

"Notes on Certain Coreopsideae (*Bidens* L. and *Coreopsis* L.) of Mexico and Southeastern Africa," in *Botanical Leaflets* (published by the author), no. 9, pp. 10-14

"Notes on Miscellaneous Dicotyledonous Plants," in *Botanical Leaflets* (published by the author), no. 8, pp. 13-26

STANDLEY, PAUL C.

"El Mombre de la Pimienta Gorda de Centro America," *Ceiba*, vol. 3, no. 3, pp. 171-172

"Eremogeton, a New Generic Name (Scrophulariaceae)," *Ceiba*, vol. 3, no. 3, pp. 172-173 [with Louis O. Williams]

"New Species of *Carex* from Guatemala," *Ceiba*, vol. 4, no. 1, pp. 62-68 [with Julian A. Steyermark]

"Plantae Centrali—Americanae, V," *Ceiba*, vol. 3, no. 3, pp. 187-220 [with Louis O. Williams]

"Un *Desmodium* Extraño," *Ceiba*, vol. 3, no. 3, p. 223

STEYERMARK, JULIAN A.

"A New *Meliosma* from the Colombian Andes," *Bulletin of the Torrey Botanical Club*, vol. 80, no. 6, p. 500

"Another Coastal Plain Relict in the Missouri Ozark Region," *Rhodora*, vol. 55, no. 649, pp. 15-17

"A Second Species of *Schismocarpus*," *Bulletin of the Torrey Botanical Club*, vol. 80, no. 2, p. 138

"Color Form of *Helianthus mollis*," *Rhodora*, vol. 55, no. 651, p. 108

"Dodecatheon amethystinum and Forma Margaritaceum in the Missouri Ozarks," *Rhodora*, vol. 55, no. 654, pp. 226-228

"*Elymus riparius* in Illinois," *Rhodora*, vol. 55, no. 652, p. 156

"The Discovery and Destruction of *Callicarpa americana* in Missouri," *Rhodora*, vol. 55, no. 655, pp. 238-241

THIERET, JOHN W.

"A Genetic Study of Complementary Genes for Purple Lemma, Palea, and Pericarp in Barley (*Hordeum vulgare* L.)," *Agronomy Journal*, vol. 45, no. 5, pp. 182-185 [with R. W. Woodward]

DEPARTMENT OF GEOLOGY

PATTERSON, BRYAN

"Notas acerca del craneo de un ejemplar juvenil de *Mesotherium cristatum* Serr.," *Revista del Museo Municipal de Ciencias Naturales y Tradicional de Mar del Plata*, vol. 1, pp. 71-78

"Un nuevo y extraordinario marsupial deseadiano," *Revista del Museo Municipal de Ciencias Naturales y Tradicional de Mar del Plata*, vol. 1, pp. 39-44

RICHARDSON, EUGENE S., JR.

"Distributional Aspects of Paleozoic Insects" (abstract), *Proceedings, Eighth Annual Meeting, North Central States Branch, American Entomological Society*, pp. 38-39

"Techniques in Studying Pennsylvanian Insects," *Proceedings of the Pennsylvania Academy of Science*, vol. 27, pp. 159-161

DEPARTMENT OF ZOOLOGY

BLAKE, EMMET REID

Birds of Mexico, A Guide for Field Identification (University of Chicago Press), xxix+644 pages, 330 illustrations (1 in color) by Douglas E. Tibbitts

GREY, MARION

"Fishes of the Family Gempylidae, with Records of *Nesiarchus* and *Epinnula* from the Western Atlantic and Descriptions of Two New Subspecies of *Epinnula orientalis*," *Copeia*, 1953, no. 3, pp. 135-141

HERSHKOVITZ, PHILIP

"Zorilla I. Geoffroy and *Spilogale* Gray, Generic Names for African and American Polecats, Respectively," *Journal of Mammalogy*, vol. 34, pp. 378-382

MARX, HYMEN

"*Atractaspis* (Moleviper), a New Record for Egypt," *Copeia*, 1952, pp. 278-279

RAND, AUSTIN L.

"Factors Affecting Feeding Rates of Anis," *Auk*, vol. 70, pp. 26-30

"Geographical Variation in the Laughing Thrush, *Garrulax affinis*," *Natural History Miscellanea*, no. 116, pp. 1-6

"The Systematic Position of the Genera *Ramphocaenus* and *Microbates*," *Auk*, vol. 70, pp. 334-337 [with Melvin A. Traylor, Jr.]

"Use of Snake Skins in Birds' Nests," *Natural History Miscellanea*, no. 125, pp. 1-5

Review of *A Generic Revision of Flycatchers of the Tribe Muscicapini* (by Charles Vaurie), in *Auk*, vol. 70, pp. 379-380

Review of *Parental Care and Its Evolution in Birds* (by S. Charles Kendeigh), in *Wilson Bulletin*, vol. 65, pp. 215-217

SANBORN, COLIN CAMPBELL

"April Record of Silver-haired Bat in Oregon," *Murrelet*, vol. 34, p. 32

"Mammals from Mindanao, Philippine Islands, Collected by the Danish Philippine Expedition, 1951-1952," *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening*, vol. 115, pp. 283-288 (1 illustration)

"Notes sur Quelques Mammiferes de l'Afrique Equatoriale Francaise," *Mammalia*, vol. 17, p. 164-169

"Obituary Notice, Javier Ortiz de la Puente, 1928-1952," *Journal of Mammalogy*, vol. 34, pp. 285-286

"Remarks on a Japanese Bat, *Vespertilio macrodactylus* Temminck," *Natural History Miscellanea*, no. 118, pp. 1-3

"Supposed Occurrence of the Sheath-tailed Bat in the Marshall Islands," *Journal of Mammalogy*, vol. 34, p. 384

"The Cuban Free-tailed Bat, *Mormopterus minutus* Miller," *Journal of Mammalogy*, vol. 34, p. 383

SCHMIDT, KARL P.

A Check List of North American Amphibians and Reptiles, sixth edition (American Society of Ichthyologists and Herpetologists), viii+280 pages

"Allegory within Allegory," *The Scientific Monthly*, vol. 76, pp. 341-343

"The 'Methodus' of Linnaeus, 1736," *The Journal of the Society for the Bibliography of Natural History*, vol. 2, pp. 369-374

PUBLIC RELATIONS

The Division of Public Relations this year concentrated its efforts upon consolidating the program of innovations made in the preceding year, primarily in television, and upon continuing in full measure the dissemination of information in all the other ways used in the past. Throughout the year spot announcements about the Museum continued to appear daily in the intervals between many major programs on all four Chicago television stations: WBBM-TV (Channel 2, Columbia Broadcasting System), WNBQ (Channel 5, National Broadcasting Company), WBKB (Channel 7, American Broadcasting Company-Paramount Theaters, Inc.), and WGN-TV (Channel 9, *Chicago Tribune*-Dumont Television Network). Renewed appreciation is given to the officials and technical staffs of each of these organizations for their continued contribution of air-time free of charge and for their generous co-operation with the Museum staff in preparation of material. It is estimated that, at commercial television-advertising rates, the time devoted to the Museum would have reached a cumulative total of around \$100,000 for the year. Members of the Museum staff appeared as guests on a number of full-length television programs to present the stories of their expeditions and other activities or, as scientific authorities, to answer questions and talk on subjects within the scope of the Museum's fields of interest.

Daily newspapers in Chicago and throughout the country and magazines continued to devote quantities of space to Museum news, features, and photographs, and radio stations and networks matched the air-time contributions of the television organizations. For this, grateful acknowledgment is made to *Chicago Tribune*, *Chicago Daily News*, *Chicago Sun-Times*, *Chicago American*, United Press Association, International News Service, International News Photos, Associated Press, Science Service, City News Bureau of Chicago, Mutual Broadcasting System, American Broadcasting Company, National Broadcasting Company, and Columbia Broadcasting System and to radio stations WGN, WBBM, WMAQ, WLS, WENR, WIND, WJJD, WAIT, WAAF, WFMT, WFME, WFJL, WEDC, WEAU, WCRW, WCFL, WBIK, WSBC, WOPA, WNMP, WLEY, WHIP, WHFC, WXRT, WGES, and WMBI.

Besides using stories and photographs from the more than four hundred publicity releases prepared by the Division of Public Relations, both press and radio-television outlets used much of the material printed in the Museum *Bulletin*, which thus fulfilled its secondary function as an additional source of general publicity as

well as its primary purpose of maintaining monthly contact between the Museum and its thousands of Members. Placards advertising the free lectures for adults provided by the Edward E. Ayer Fund and the motion pictures for children presented by Raymond Foundation were displayed on station platforms and in passenger coaches through the continued courtesy of Chicago Transit Authority, Chicago Aurora and Elgin Railroad, Illinois Central System, and Chicago and North Western Railway. The Museum takes this opportunity to thank the transportation organizations for their important and generous assistance in publicizing its free educational programs.

This reproduction of a branch of camphor (*Cinnamomum camphora*) in the fruiting stage was added to the exhibits in Martin A. and Carrie Ryerson Hall (Hall 29).



THE BOOK SHOP

Sales in the The Book Shop of the Museum totaled more than \$74,000, over \$5,000 more than total sales in 1952. The Book Shop was established in 1938, and it is interesting to note that each succeeding year, with the exception of 1940 and 1948, has brought an increase in sales. The endowment fund created from proceeds amounted to slightly over \$120,000 at the end of the year. The number of sales by mail continued to be large, although the dollar-amount was small in relation to number of sales. Shipments were made to forty-six states and territories and to a number of foreign destinations. The continuing increase in our mail-order business is another indication of the ever-widening influence of the Museum in its educational work.

CAFETERIA

Again the number of people served in the cafeteria and lunchroom showed an increase, the total being 324,461 in comparison with the total of 321,248 for last year. Gross receipts amounted to almost \$137,000, an increase of about \$5,000 over the year before. In order that visitors may obtain refreshment at hours when the cafeteria and lunchroom are not open, automatic vending-machines for Coca-Cola were installed in a ground-floor corridor. As in previous years, thousands of school children who brought their lunches were accommodated in the lunchroom and picnic room.

MAINTENANCE, CONSTRUCTION, AND ENGINEERING

Of major importance is the conversion of Hall H on the ground floor, which formerly housed our Philippine ethnological collections, into a convenient and well-equipped storage room for our collections from Polynesia, Melanesia, Micronesia, Africa, and Madagascar. Reinstallation of the exhibits from Melanesia, Micronesia, and Polynesia will retire to the study-collections a great deal of material that in the past has been on display. This will result in more attractive exhibits and will improve the study-collections by making more of our unique and interesting material available for detailed study. The vacated hall is being equipped with steel shelving, adequate lighting, and hoisting equipment. Eventually all of the specimens from the South Seas will be housed in this single storage-room, adjacent to the halls where related material is exhibited. A



The Museum annually entertains the delegates to the National 4-H Club Congress.

220-volt power line has been run into the room to provide power for the exhaust fan that is to be installed in the poison room reserved for materials susceptible to insect damage. Construction work was more than half completed at the end of the year.

Revamping was completed of two areas on the ground floor where the floors were out of alignment because of settling of the sand fill during a period of more than thirty-five years. The floors were brought back to their proper levels by the "mud-jacking" process, in which a wet mixture of earth and cement is forced under pressure through holes drilled in the floors. In one place a settlement of seven inches was completely restored. New plastering of walls was required in some instances, and all the rooms were entirely redecorated. Subsequently, the publications office, formerly in this area, was moved to the south end of the building close to the publications storage-vault, the print shop, and the shipping room so that a great deal of transportation is now unnecessary. The Audi-

tor's office was moved into the vacated space, resulting in a consolidation of the business offices in the area nearest the offices of the Director and Registrar. The office of Raymond Foundation was moved from the second to the first floor into the office formerly occupied by the Auditor. This move also results in economy of time by having the guide-lecturers in the office closest to the north entrance of the Museum. The Division of Public Relations returned to its former office after the changes were completed.

Cleaning and painting of the building are constant processes. Stanley Field Hall and the adjacent vistas were completely redone. This undertaking was of such magnitude and required such special scaffolding that the work was done by contract. In addition, the Meeting Room, Hall N, the lobby of James Simpson Theatre, and fourteen other rooms were repainted. Walls were washed in the cafeteria and five of the exhibition halls. A new carpet was installed in the aisles of the Lecture Hall after the floor had been refinished. Reupholstering of seats in the Theatre, which has been under way for some years, was completed.

Special attention was given to the outside of the building throughout the period of favorable weather. All of the exterior marble was sprayed with silicone waterproofing in the hope of preventing the gradual erosion of the surface. The blacktop on the terrace levels at both the north and south entrances received an additional application of liquid waterproofing, and the steps approaching both entrances were tuckpointed where necessary. Window sash was repaired or replaced outside of Halls 25, 26, 27, 28, and 36. All window frames and sash were repaired on the outside, and the outside freight-elevator was completely repainted.

During the summer shutdown all boilers were thoroughly cleaned and tubes turbed. Silica jell was placed in the boiler drums and all manhole plates were tightened to prevent the entrance of any moisture that would cause corrosion during the shutdown period. The entire heating plant was rechecked, cleaned, repaired where necessary, painted to prevent corrosion, and put in first-class condition. A new coal lorry was installed, and a half key removed from each grate-bar to allow for the passage of more air through the fires. Thermostatic traps were substituted for worn and obsolete equipment on radiators and coils, thereby increasing the efficiency of the heating plant. The usual plumbing maintenance was carried on throughout the year, and new hot-water lines were run in to many locations where needed. Two large exhaust fans were mounted at the end of the main skylight at the south end of the building to remove the hot air during the summer months, thus lowering the

temperature of the entire fourth floor. The program of installing new panel-boards in the interest of both efficiency and safety was continued. In addition to its own needs, the Museum, under contract, furnished almost 25,000,000 pounds of steam to Shedd Aquarium, the Administration Building of the Chicago Park District, and Soldier Field.

The Divisions of Maintenance and Engineering assisted in the installation and reinstallation of exhibits in many of our exhibition halls. Halls 6 and 7, housing American Indian collections, and Hall 24 (George T. and Frances Gaylord Smith Hall), housing Chinese exhibits, were greatly improved by case alterations, rearrangement, and new lighting. The large built-in case in Hall 20 and a smaller case in Hall N were made ready to receive the exhibits prepared by the Department of Zoology (see page 59) and subsequently were glazed and poisoned. A multiplicity of requisitions for the manufacture, alteration, or moving of special equipment, for special lighting, and for special-exhibit cases was handled expeditiously throughout the year. The splendid appearance of the building, its adequate lighting, and the constant improvements of its working facilities bear testimony to the efficiency of the Engineering and Maintenance staff.

MISCELLANEOUS

In the pages that follow are submitted the Museum's financial statements, attendance statistics, door receipts, accessions, list of Members, articles of incorporation, and amended by-laws.

CLIFFORD C. GREGG, *Director*
Chicago Natural History Museum

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES CURRENT FUNDS

FOR YEARS 1953 AND 1952

Operating Fund

INCOME	1953	1952
From investments of		
General endowment funds.	\$ 708,344.42	\$ 727,084.69
Life and associate membership funds.	27,728.10	26,751.69
	<u>\$ 736,072.52</u>	<u>\$ 753,836.38</u>
Chicago Park District.	127,532.68	128,478.39
Annual and sustaining memberships.	20,695.00	20,885.00
Admissions.	33,049.50	33,692.50
Sundry receipts, including general purpose contributions.	39,820.81	38,304.61
Restricted funds transferred to apply against Operating Fund expenditures (contra)	83,754.49	83,136.20
	<u>\$1,040,925.00</u>	<u>\$1,058,333.08</u>
 EXPENDITURES		
Operating expenses		
Departmental operating expenses.	\$ 109,127.53	\$ 114,859.36
General operating expenses.	703,894.62	661,572.14*
Building repairs and alterations.	107,718.50	118,674.02
	<u>\$ 920,740.65</u>	<u>\$ 895,105.52</u>
Collections		
Purchases and expedition costs.	36,912.11	68,708.09
Furniture, fixtures, and equipment.	9,853.66	14,399.77
Pensions and employee benefits.	57,016.82	52,871.33
Appropriations in lieu of premiums formerly payable on assigned life insurance.	14,500.00	14,500.00
Provision for mechanical plant depreciation (contra).	10,000.00	10,000.00
Appropriated to cover operating deficit of The N. W. Harris Public School Extension (contra).	123.65	2,206.37
	<u>\$1,049,146.89</u>	<u>\$1,057,791.08</u>
EXCESS (DEFICIENCY) OF INCOME OVER EX- PENDITURES.	<u>\$ (8,221.89)</u>	<u>\$ 542.00</u>

*Museum operating expenses of \$63,462.14 which in 1952 were included under "collections" have been transferred to general operating expenses to conform with 1953 classification

CONTINUED ON NEXT PAGE

COMPARATIVE STATEMENT OF INCOME AND EXPENDITURES—CURRENT FUNDS

FOR YEARS 1953 AND 1952 (CONTINUED)

The N. W. Harris Public School

Extension	1953	1952
Income from endowments	\$ 21,369.33	\$ 20,638.30
Expenditures	<u>21,492.98</u>	<u>22,844.67</u>
DEFICIT TRANSFERRED TO OPERATING FUND (CONTRA)	<u>\$ 123.65</u>	<u>\$ 2,206.37</u>

Other Restricted Funds

INCOME

From Specific Endowment Fund investments	\$ 53,805.44	\$ 50,959.15
Contributions for specified purposes	13,400.00	42,428.01
Operating Fund appropriations for mechanical plant depreciation and contingencies (contra)	10,000.00	10,000.00
Sundry receipts—net	<u>36,808.81</u>	<u>30,305.80</u>
	<u>\$ 114,014.25</u>	<u>\$ 133,692.96</u>

EXPENDITURES

Transferred to Operating Fund to apply against expenditures (contra)	\$ 83,754.49	\$ 83,136.20
Added to Endowment Fund principal	<u>52,000.00</u>	<u>24,000.00</u>
	<u>\$ 135,754.49</u>	<u>\$ 107,136.20</u>
EXCESS (DEFICIENCY) OF INCOME OVER EX- PENDITURES	<u>\$ (21,740.24)</u>	<u>\$ 26,556.76</u>

TO THE TRUSTEES
CHICAGO NATURAL HISTORY MUSEUM
CHICAGO, ILLINOIS

In our opinion the accompanying statement presents fairly the income and expenditures of the current funds of Chicago Natural History Museum for the years 1953 and 1952, in conformity with generally accepted accounting principles consistently applied during the year. Our examination of the statement was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

ARTHUR YOUNG AND COMPANY

Chicago, Illinois
February 11, 1954

COMPARATIVE ATTENDANCE STATISTICS AND DOOR RECEIPTS

FOR YEARS 1953 AND 1952

	1953		1952
Total attendance.....	1,204,855		1,305,556
Paid attendance.....	132,198		134,770
Free admissions on pay days			
Students.....	32,450		32,226
School children.....	75,979		93,861
Teachers.....	4,667		4,988
Members.....	520		640
Service men and women.....	1,648		2,532
Special meetings and occasions.....	1,095		2,953
Press.....	6		
Admissions on free days			
Thursdays (52).....	155,497	(51)	137,444
Saturdays (52).....	277,346	(52)	315,129
Sundays (52).....	523,467	(52)	581,102
Highest attendance on any day			
(February 22).....	15,323	(November 9)	16,488
Lowest attendance on any day			
(December 18).....	161	(March 4)	159
Highest paid attendance (September 7) ..	4,223	(September 1)	3,600
Average daily admissions (363 days).....	3,319	(364 days)	3,586
Average paid admissions (207 days).....	633	(209 days)	645
<hr/>			
Copies of <i>General Guide</i> sold.....	26,675		27,026
Number of articles checked.....	38,785		45,805
Number of picture post-cards sold.....	248,392		283,394
Sales of Museum publications (both scientific and popular) and photographs; rental of wheel chairs.....	\$15,128.53		\$13,034.69

Contributions and Bequests

Contributions and bequests to Chicago Natural History Museum may be made in securities, money, books, or collections. They may, if desired, take the form of a memorial to a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

FORM OF BEQUEST

I do hereby give and bequeath to Chicago Natural History Museum of the City of Chicago, State of Illinois:

Cash contributions made within the taxable year to Chicago Natural History Museum to an amount not in excess of 20 per cent of the taxpayer's net income are allowable as deductions in computing net income for federal income tax

ACCESSIONS, 1953

DEPARTMENT OF ANTHROPOLOGY—ACCESSIONS

ARIZONA STATE MUSEUM, Tucson: 289 archaeological specimens, including pottery sherds, restorable pottery vessels, artifacts, and unworked shells—various sites in Arizona (exchange)

BORDEN, JOHN, Spring Lake, Michigan: model of Aleut boat—Aleutian Islands (gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Dr. Paul S. Martin (Southwest Archaeological Expedition, 1953): 833 specimens, including whole or restorable pottery vessels, objects of stone, bone, shell, baked clay, and textiles, and burials, and about 40,000 pottery sherds—Higgins Flat Pueblo, Near Reserve, New Mexico

INGERSOLL, ADMIRAL ROYAL EASON, U.S.N. RET., La Porte, Indiana: Chimu whistling jar—Peru (gift); 59 weapons—China, Japan, and Africa (gift)

JACOBS, LOUIS, Merrimac, Wisconsin: 7 pieces of blue-and-white ceramic "export ware" of Chinese origin—Philippine Islands (gift)

JONES, ROBERT D., JR., Coal Bay, Alaska: Aleut-type skull, female—Cherni Island, Aleutian Islands (gift)

MACRAE, MRS. ALBERT, Glencoe, Illinois: Navaho saddle-blanket—southwest United States (gift)

MENDELSON, DR. R. W., Albuquerque, New Mexico: portion of Buddhist scripture incised on palm-leaf strips, Bangkok hat, embroidered-silk wall hanging—Siam (gift)

NAKUTIN, THEODORE, Chicago: fur parka—Alaska (gift)

RUISECO, JOHN, Chicago: Olmec-style human head carved of basalt—near Santiago, Tuxtla, Veracruz, Mexico (gift)

TRIER, ROBERT, Chicago: carved human figure of wood, bone fishhook, bone awl and needles, stone adz, chipped stone tools (15 specimens)—Easter Island (gift); 7 tools of stone and bone, 3 harpoon heads of bone and ivory, 1 wooden dipper, 3 ornaments of wood, bone, and ivory, 1 bone miniature whale, 2 model sleds and teams of carved ivory—Alaska (gift)

WATSON, ROSE J., Oak Park, Illinois: 2 scrapbooks of clippings of Dr. George A. Dorsey's letters to the *Chicago Tribune* on his three-year trip around the world in 1909–12 (gift)

DEPARTMENT OF BOTANY—ACCESSIONS

ALLEN, Dr. MARY BELLE, Pacific Grove, California: 18 algae (gift)

BALL, DR. CARLETON R., Washington, D.C.: 10 plant specimens (gift)

BARTELL, KARL, Blue Island, Illinois: 9 plant specimens (gift)

BENNETT, HOLLY R., Chicago: 1,775 plant specimens (gift)

BERNATOWICZ, DR. ALBERT J., Eugene, Oregon: 3 algae (gift)

BISHOP MUSEUM, BERNICE P., Honolulu: plant specimen (exchange)

BOLD, DR. HAROLD C., Nashville, Tennessee: 32 algae (gift)

BONDAR, GREGORIO, Bahia, Brazil: 2 plant specimens, 11 photographs (exchange)

BOTANISK MUSEUM, Copenhagen, Denmark: 446 cryptogamic specimens (exchange)

BROOK, DR. A. J., Pitlochry, Scotland: cryptogamic specimen (gift)

CALIFORNIA, UNIVERSITY OF, Berkeley: 485 plant specimens (exchange); 72 plant specimens (gift)

CALIFORNIA, UNIVERSITY OF, Santa Barbara: plant specimen (gift)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco: 108 plant specimens (exchange); 1 plant specimen (gift)

CAYLOR, DR. R. L., Cleveland, Mississippi: 7 algae (gift)

CHAPMAN, DR. V. J., Auckland, New Zealand: 4 algae (gift)

CHICAGO NATURAL HISTORY MUSEUM:
Collected by Dr. Norman C. Fassett
(Salvadorian Project, 1950-51): 45
plant specimens

Collected by Dr. Julian A. Steyer-
mark (Venezuela Botanical Expedition,
1953): 10,000 plant specimens

CONSERVATOR OF FORESTS, Belize,
British Honduras: plant specimen (gift)

CULL, IRENE, Peoria, Illinois: 4 plant
specimens (gift)

DAILY, WILLIAM A., Indianapolis: 59
algae (gift)

DAWSON, DR. E. YALE, Los Angeles:
23 algae (gift)

DEMAREE, DR. DELZIE, Bauxite,
Arkansas: 94 plant specimens (gift)

DEVINEY, DR. E., Tallahassee,
Florida: cryptogamic specimen (gift)

DILLER, DR. VIOLET M., Cincinnati:
44 algae (gift)

DODD, DR. J. D., Ames, Iowa: 3
algae (gift)

DORRIS, TROY C., Homer, Illinois: 6
algae (gift)

DOTY, DR. MAXWELL S., Honolulu:
75 algae (gift)

EDMONDSON, DR. W. T., Seattle: 9
algae (gift)

ESCUELA AGRÍCOLA PANAMERICANA,
Tegucigalpa, Honduras: 326 plant
specimens (exchange)

FIELD, DR. HENRY, Washington,
D.C.: 29 plant specimens, 43 crypto-
gamic specimens (gift)

FLINT, DR. LEWIS H., Baton Rouge,
Louisiana: 11 algae (gift)

FOREST, DR. H. SILVA, Williamsburg,
Virginia: 483 algae (gift)

FOSBERG, DR. F. RAYMOND, Wash-
ington D.C.: 55 algae (gift)

FOSTER, MULFORD B., Orlando,
Florida: cycad cone (gift)

FRANZEN, ALBERT J., Chicago: 3
cryptogamic specimens (gift)

GERHARDT, DR. R. W., Lincoln,
California: 4 algae (gift)

GRAY HERBARIUM, Cambridge, Mas-
sachusetts: 249 plant specimens (ex-
change); a few fruits (gift)

HARRIS, DR. PHYLLIS S., La Jolla,
California: 2 algae (gift)

HAWKES, DR. J. G., Birmingham,
England: 19 photographs (exchange)

HILLIARD, DR. D., Anchorage,
Alaska: 36 algae (gift)

HUMM, DR. HAROLD J., Tallahassee,
Florida: 15 algae (gift)

IBANEZ, DR. N., Turjillo, Peru: 24
algae (gift)

ILLINOIS STATE MUSEUM, Spring-
field: plant specimen (gift)

ILTIS, DR. HUGH, Fayetteville, Ar-
kansas: 66 algae (gift)

INSTITUT BOTANIQUE, Montreal,
Quebec, Canada: 134 plant specimens
(exchange)

INSTITUTE DE BIOLOGIA, Chapulte-
pec, Mexico: 25 plant specimens (gift)

INSTITUTE OF JAMAICA, Kingston: 35
algae (gift)

INSTITUTO AGRONÓMICO DO NORTE,
Belem, Brazil: 40 plant specimens (gift)

INSTITUTO BOTANICO, Florence,
Italy: 100 plant specimens (exchange)

ISHAM, DR. LAWRENCE B., Coral
Gables, Florida: 27 algae (gift)

JOHNSON, S. C., AND SON, INCOR-
PORATED, Racine, Wisconsin: palm ma-
terial (gift)

KAEISER, DR. MARGARET, Carbon-
dale, Illinois: 4 slides (exchange)

KIBBE, DR. ALICE L., Carthage, Illi-
nois: 206 folders of H. N. Patterson
correspondence (gift)

KIENER, DR. WALTER B., Lincoln,
Nebraska: 196 cryptogamic specimens
(gift)

KILLIP, DR. E. P., Washington, D.C.:
124 plant specimens, 90 algae (gift)

KINGSBURY, DR. JOHN M., Cam-
bridge, Massachusetts: cryptogamic
specimen (gift)

KOSTER, DR. JOSEPHINE T., Leiden,
Netherlands: cryptogamic specimen
(gift)

LA RIVERS, DR. IRA, Reno, Nevada:
185 algae (gift)

LE MESURIER, DR. MARGARET,
Montreal, Quebec, Canada: 8 algae
(gift)

MABILLE, DR. JEAN, Bertheniwart-
par-Moy, France: 8 algae (gift)

MADSEN, DR. GRACE C., Tallahassee,
Florida: 206 algae (gift)

MARSHALL, DR. B. C., Hot Springs,
Arkansas: 1 alga (gift)

MATUDA, EIZI, Chiapas, Mexico: 134
plant specimens (gift)

MILLAR, JOHN R., Chicago: 4 plant
specimens (gift)

MILLE, PADRE LUIS, Manabi, Ecua-
dor: 9 plant specimens (gift)

- MINNESOTA, UNIVERSITY OF, Minneapolis: 79 plant specimens (exchange)
- MISSOURI BOTANICAL GARDEN, St. Louis: 362 plant specimens (exchange)
- MOUL, DR. E. T., New Brunswick, New Jersey: 9 algae (gift)
- MOWRY, CLAUDE R., Reno Nevada: 2 plant specimens (gift)
- MUSEO DE HISTORIA NATURAL, Lima, Peru: 97 plant specimens (exchange)
- MUSEO NACIONAL HISTORIA NATURAL, Santiago, Chile: 5 plant specimens (gift)
- NATIONAL SCIENCE MUSEUM, Tokyo: 400 plant specimens (exchange)
- NATURHISTORISCHES MUSEUM, Vienna, Austria: 378 algae (exchange); 2,739 algae (gift)
- NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden: 2,030 plant specimens (exchange)
- NEWHOUSE, J., Honolulu: 138 algae (gift)
- NEW YORK BOTANICAL GARDEN, New York: 681 plant specimens (exchange); 420 plant specimens, a few fruits, 79 algae (gift)
- NIELSEN, DR. CHESTER S., Tallahassee, Florida: 81 algae (gift)
- OAKS, O. A., Wilmette, Illinois: 2 wood specimens (gift)
- OCHOA, CARLOS, Huancayo, Peru: 333 plant specimens (exchange)
- OROZCO, DR. J. M., San José, Costa Rica: 17 algae (gift)
- PALMER, DR. C. MERVIN, Cincinnati: 112 algae (gift)
- PALMITER, DR. C. C., Richland, Washington: 49 algae (gift)
- PALUMBO, DR. R. F., Seattle: 42 algae (gift)
- PATTERSON, BRYAN, Homewood, Illinois: 2 plant specimens (gift)
- PIERCE, DR. E. LOWE, Woods Hole, Massachusetts: cryptogamic specimen (gift)
- RICHARDS FUND, DONALD: 2,500 fungi—Michigan; 561 cryptogams—Sweden; 400 mosses—Japan; 308 cryptogams—Wisconsin; 100 lichens—Sweden; seaweed—New Zealand
- RICHARDSON, EUGENE S., JR., Gurnee, Illinois: 3 algae (gift)
- ROHWEDER, DR. OTTO, Hamburg, Germany: 33 plant specimens (gift)
- ROUSSEAU, DR. JACQUES, Montreal, Quebec, Canada: 35 algae (gift)
- ROYAL BOTANIC GARDENS, Kew, England: 88 plant specimens (exchange)
- RUTGERS UNIVERSITY, New Brunswick, New Jersey: 29 algae (exchange)
- SCHALLERT, DR. P. O., Altamonte Springs, Florida: 63 cryptogamic specimens (gift)
- SELLA, EMIL, Chicago: 3 cryptogamic specimens (gift)
- SHERFF, DR. EARL E., Chicago: 404 plant specimens, 183 negatives, 183 prints (gift)
- SILVA, DR. P. C., Urbana, Illinois: 5 algae (gift)
- SLUSHER, MRS. H. E., Jefferson City, Missouri: plant specimen (gift)
- SMITH, FRANK O., Ames, Iowa: plant specimen (gift)
- SORIANO, DR. J. D., Quezon City, Philippine Islands: 312 algae (gift)
- SOUKUP, DR. J., Lima, Peru: 9 plant specimens (gift)
- SOUTHERN METHODIST UNIVERSITY, Dallas: 61 algae (exchange)
- STARR, DR. RICHARD C., Bloomington, Indiana: cryptogamic specimen (gift)
- STEPHENSON, DR. T. A., Aberystwyth, Wales: 23 algae (gift)
- SWINK, FLOYD A., Chicago: 770 plant specimens (gift)
- SYMOENS, DR. J. J., Brussels, Belgium: 6 algae (gift)
- TENNESSEE, UNIVERSITY OF, Knoxville: 5 plant specimens (exchange)
- TEXAS, AGRICULTURAL AND MECHANICAL COLLEGE OF, College Station: 24 plant specimens (gift)
- THIERET, JOHN W., Chicago: 2 plant specimens (gift)
- TILDEN, DR. J. E., Lake Wales, Florida: 153 algae (gift)
- UNITED STATES CUSTOMS SERVICE, Chicago: plant specimen (gift)
- UNITED STATES DEPARTMENT OF AGRICULTURE, Beltsville, Maryland: plant specimen (gift)
- UNITED STATES NATIONAL MUSEUM, Washington, D.C.: 16 plant specimens, 27 cryptogamic specimens (exchange); 240 plant specimens, 3 algae (gift)
- UNIVERSITY MUSEUM, Ann Arbor, Michigan: 565 cryptogamic specimens (exchange)
- VARGAS, DR. CESAR, Cuzco, Peru: 7 algae (gift)

VALASQUEZ, DR. G. T., Quezon City, Philippine Islands: 28 algae (gift)

VOTH, DR. PAUL D., Chicago: cryptogamic specimen (gift)

WILSON, ARCHIE F., Flossmoor, Illinois: 151 wood specimens (exchange); 11 plant specimens (gift)

WILSON, DR. LEONARD R., Amherst, Massachusetts: pollen specimen (gift)

WOOD, DR. R. D., Kingston, Rhode Island: 12 algae (gift)

YALE UNIVERSITY, SCHOOL OF FORESTRY, New Haven, Connecticut: 52 plant specimens (gift)

ZELLER, CATHERINE, Springfield, Illinois: 3 plant specimens (gift)

ZIMMERMAN, ANNIE, Chicago: 28 algae (gift)

DEPARTMENT OF GEOLOGY—ACCESSIONS

ALESSIO, O. G., Chicago: 3 rutile specimens—Oaxaca, Mexico (gift)

BETA RESEARCH LABORATORY, Chicago: 25 natural elements (gift)

BLANCHARD, L. J., Bakersfield, California: polished moss agate—Horse Canyon, California (gift)

BOOKWALTER, RICHARD M., Chicago: 2 petrified wood specimens—Petrified Forest, Arizona (gift)

BRITTS, DR. JOHN H. (deceased), Clinton, Missouri: collection of 265 fossil invertebrates (part transferred from Department of Zoology)—various localities (gift)

CASEY, MRS. D. L., Yuma, Arizona: skull and jaws of *Eporeodon occidentalis*—Grant County, Oregon (gift)

CHALMERS CRYSTAL FUND, WILLIAM: 12 crystal casts—New Jersey and Massachusetts; 1 specimen each of vanadinite and endlicheite—Mexico

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Orville L. Gilpin, William D. Turnbull, and Priscilla F. Turnbull (Wyoming Paleontological Expedition, 1953): collection of Devonian fishes, Eocene turtles, *Hyrachyus* upper jaw, and microfauna—various localities

Collected by Eugene S. Richardson, Jr., and George Langford (Wilmington, Illinois, paleontological field trips, 1953): collection of fossil invertebrates—Illinois

Purchases: casts of Miocene Hominoidea—Kenya

CRANE COMPANY, Chicago: 3 titanium specimens (gift)

DELCO, ERNEST, Michigan City, Indiana: *Mastodon americanus*—Indiana (gift)

HAZEL, BURREL F., Fort Peck, Montana: 3 fossil invertebrates—Montana (gift)

IACARELLI, DR. EMILIO, Firenze, Italy: cinnabar specimen—Italy (gift)

JOHNSON, DONALD M., Jefferson City, Missouri: 2 casts of fossil mammal-teeth (gift)

KREUTZER, DAN, Chicago: slab of fossil invertebrates—Ohio (gift)

LANGFORD, GEORGE, JR., Hinsdale, Illinois: Pennsylvanian insect—Illinois

LINDBERG, G. E., Chicago: *Calymene niagarensis*—Chicago (gift)

LOWENSTAM, DR. HEINZ, Chicago: porpoise vertebra—Japan (gift)

ORVIG, DR. TOR, Stockholm, Sweden: fragment of Beyrichia-kalk—Pomerania (gift); rubber mold of *Astraspis desiderata*—Colorado (gift)

ROSS, CHARLES A., Urbana, Illinois: insect wing—Illinois (gift)

RUBENS, MRS. MARION, Chicago: double strand seed-pearl necklace (gift)

SCHNEIDER, E. E., Chicago: hand specimen of blue opaline quartz porphyry, several small crystals—Texas (gift)

SCHWERTFAGER, WILLIAM E., Rock Falls, Illinois: 3 shark teeth, 2 plesiosaur teeth—Kansas (gift)

SMOLKER, ROBERT, Chicago: *Acanthotelson stimpsoni*—Will County, Illinois (gift)

TEXAS, UNIVERSITY OF, BUREAU OF ECONOMIC GEOLOGY, Austin: cast of skull of *Pliohippus fossulatus*—Texas (exchange)

THOMAS, DR. WILLIAM B., Lyons, New Jersey: 15 concretions, 7 containing fossil fishes—Greenland (gift)

TURNBULL, MR. AND MRS. WILLIAM D.: insect wing, complete Phlegethontia skeleton, collection of fossil plants and invertebrates—Will County, Illinois (gift)

WHITFIELD, JON, Evanston, Illinois:
part of elytron of cockroach—Will
County, Illinois (gift)

WHITFIELD, MRS. ROBERT H., Evans-
ton, Illinois: Pennsylvanian insect—
Will County, Illinois (gift)

DEPARTMENT OF ZOOLOGY—ACCESSIONS

AMERICAN MUSEUM OF NATURAL
HISTORY, New York: DEPARTMENT OF
FISHES AND AQUATICS, 2 fishes—Ba-
hama Islands (gift); DEPARTMENT OF
INSECTS AND SPIDERS, 3 insects (1 para-
type and 2 cotypes)—South America
(gift)

ARCTIC HEALTH RESEARCH CENTER,
Anchorage, Alaska: 12 mammal skulls
—Alaska (permanent loan)

BAUMAN, JOSEPH, Chesterton, Indi-
ana: 2 salamanders—Illinois (gift)

BEETLE, DOROTHY E., Laramie,
Wyoming: 5 lots of shells—South
America (gift)

BENESH, BERNARD, Burrville, Ten-
nessee: 2 lizards, 1 snake, 9 insects, 2
beetle pupae—United States and Eu-
rope (gift)

BEQUAERT, DR. JOSEPH, Cambridge,
Massachusetts: 12 batflies—Cocha-
bamba, Bolivia (exchange)

BIOLOGICAL INSTITUTE OF TEL AVIV,
Tel Aviv, Israel: 1 bird—Wadi Hatira,
Israel (gift)

BOGNAR, A., Whiting, Indiana: 16
mammals—Indiana and Texas (gift)

BROWN, DR. WALTER C., Palo Alto,
California: 87 reptiles and amphibians
—United States (gift)

BUSWELL, ROBERT G., New Wales,
Pennsylvania, AND CLARK G. BUSWELL,
Los Angeles: shell collection of the late
Dr. Clark A. Buswell (approximately
1,000 specimens)—worldwide (gift)

CAGLE, DR. FRED R., New Orleans:
6 turtles (paratypes)—Alabama and
Mississippi (gift)

CALIFORNIA, UNIVERSITY OF, DI-
VISION OF ENTOMOLOGY AND PARASI-
TOLOGY, Berkeley: 5 beetles (paratypes)
—Oregon and California (gift)

CALVARY, DR. ELLEN, Chicago: 1
land snail—Glacier National Park (gift)

CAPURRO, DR. LUIS, Santiago, Chile:
4 frogs—Chile (exchange)

CARNEGIE MUSEUM, Pittsburgh: 2
birds—French Guiana and Venezuela
(exchange); 4 eels, 1 blenny—Guam
(gift)

CHICAGO NATURAL HISTORY MUSEUM:

Collected by Harry A. Beatty (West
Africa Zoological Expedition, 1950–52):
126 mammals, 325 birds, 147 reptiles
and amphibians 518 insects, 7 lots of
crabs and snails—West Africa

Collected by D. Dwight Davis and
Robert F. Inger (Borneo Zoological Ex-
pedition, 1950): 846 insects and their
allies—Borneo

Collected by Luis de la Torre and
William G. Reeder (Guatemala Zoo-
logical Expedition, 1952): 48 mammals,
1,023 insects and their allies—Guate-
mala

Collected by Henry S. Dybas (Calif-
ornia Zoological Field Trip, 1952): 6
salamanders—western United States

Collected by Donald Erdman (West
Indies Zoological Expedition, 1953): 1
sea snake, 2,002 fishes—West Indies

Collected by Dr. Fritz Haas (North-
west Zoological Field Trip, 1953): 18
reptiles and amphibians, 123 lots of
lower invertebrates—northwestern
coast of United States and Canada

Collected by Philip Hershkovitz
(Colombia Zoological Expedition, 1948–
52): 119 reptiles and amphibians, 479
insects and their allies—Colombia

Collected by Robert F. Inger (local
field work): 2 fishes—Lake Chatauqua,
Illinois

Collected by Clifford H. and Sarah
Pope (West Coast Zoological Field
Trip, 1953): 1 bat, 394 reptiles and am-
phibians—Mexico and western United
States

Collected by Dr. D. S. Rabor (Philip-
pine Islands field work): 28 mammals
—Philippine Islands

Collected by Colin C. Sanborn
(Peruvian Zoological Expedition, 1946):
62 insects—Ecuador

Collected by Dr. Julian A. Steyer-
mark and Charles Griffin (Venezuela
Botanical Expedition, 1953): 21 mam-
mals, 21 birds, 7 reptiles and amphi-
bians, 51 fishes—Venezuela

Collected by Loren P. Woods and
Robert F. Inger (Co-operative Field

Work with United States Fish and Wildlife Service in Gulf of Mexico, 1952): 418 lots of fishes

Purchases: 153 mammals, 2,980 birds, 282 reptiles and amphibians, 748 fishes, approximately 20,000 insects and their allies (including 2,500 fossil insects in amber), 741 lots of lower invertebrates

Transfers: 3 birdskins and 172 nestling birds in alcohol—from the Department of the N. W. Harris Public School Extension

CHICAGO ZOOLOGICAL SOCIETY, Brookfield, Illinois: 1 tuatara, 5 mammals, 1 bird—various localities (gift)

COOK, HARRY L., Chicago: 8 fishes—Brazil (gift)

CORYNDON MUSEUM, Nairobi, East Africa: 20 beetles—Africa (exchange)

DEEM, PRIVATE FIRST CLASS CHARLES P., APO San Francisco: 2 fishes—Korea (gift)

DE LA TORRE, LUIS, Ann Arbor, Michigan: 24 mammals, 451 insects and their allies—Guatemala (gift)

DELIBERTO, RICCY, Westmont, Illinois: shed skin of garter snake—Illinois (gift)

DEMAREE, DELZIE, Ocean Springs, Mississippi: 62 shells—Mississippi (gift)

DEUQUET, C., Oatley, New South Wales, Australia: 4 insects and their allies—Australia (gift)

DODGE, DR. HAROLD, Savannah, Georgia: 7 insects (paratypes)—United States (gift)

DONOVAN, MR. AND MRS. J. W., West Palm Beach, Florida: 42 lots of mollusks—Canada (gift)

DRAKE, ROBERT J., Tucson, Arizona: 5 shells (2 paratypes)—Chihuahua, Mexico (gift)

DUNDEE, HAROLD A., Ann Arbor, Michigan: 179 reptiles and amphibians—United States (exchange)

DYBAS, HENRY S., Homewood, Illinois: 104 insects—Illinois (gift)

EMERSON, DR. ALFRED E., Chicago: approximately 6,500 termites (containing many paratypes and cotypes)—worldwide (gift)

ENGLISH, CHARLES L., Miami, Florida: 4 bats—Florida (gift)

FECHTNER, FREDERICK R., Chicago: 1 clam—Illinois (gift)

FIELD DR. HENRY, Washington, D.C.: 20 snakes, 57 lots of lower inver-

tebrates—Persian Gulf and Florida (gift)

FLEMING, DR. ROBERT L., Mussoorie, India: 265 birds—India (gift and exchange)

FLORIDA STATE BOARD OF HEALTH, Jacksonville: 365 bats (gift)

HAAS, DR. GEORG, Jerusalem, Israel: 2 worm snakes—Israel (gift)

HALTENORTH, DR. THEODORE, Munich, Germany: 3 mammals—Germany (exchange)

HARBOURS AND MARINE, DEPARTMENT OF, Brisbane, Australia: 120 fishes—Queensland and Great Barrier Reef (exchange)

HARRIS, LUCIEN, JR., Avondale Estates, Georgia: 2 insect cocoons—Stone Mountain, Georgia (gift)

HEDLEY, JOHN, Edinburgh, Scotland: 2 civet skins and claw of honey bear—Bukit Kretam, North Borneo (gift)

HELTON, JOHN T., Troy, Alabama: 1 snake—Alabama (gift)

HENDRICKSON, DR. JOHN R., University of Malaya, Singapore: 264 fishes—Singapore and vicinity (exchange); 22 snakes—locality unknown (gift)

HILDEBRAND, HENRY, Port Aransas, Texas: 1 fish—southern Gulf of Mexico (gift)

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 Gimbel, J. W., Jr.
 Ginther, Miss Minnie C.
 Giryotas, Dr. Emelia J.
 Glaescher, Mrs. G. W.
 Glasner, Rudolph W.
 Glasser, Joshua B.
 Goes, Mrs. Arthur A.
 Golding, Robert N.
 Goldman, Mrs. Louis
 Goldstein, Dr. Abraham
 Goldstein, Dr. Helen L.
 Button
 Goldstein, Nathan S.
 Goldstine, Dr. Mark T.
 Goldy, Walter I.
 Goltra, Mrs. William B.
 Goode, Mrs. Rowland T.
 Gooden, G. E.
 Goodman, Benedict K.
 Goodman, Mrs. Milton F.
 Goodman, W. J.
 Goodman, William E.
 Goodwin, Clarence
 Norton
 Goodwin, George S.
 Gordon, Colin S.
 Gordon, Harold J.
 Gordon, Dr. Richard J.
 Gordon, Mrs. Robert D.
 Gorrell, Mrs. Warren
 Gottlieb, Frederick M.
 Gould, Jay
 Gould, Mrs. June K.
 Grade, Joseph Y.
 Graham, Douglas
 Graham, E. V.
 Graham, Miss
 Margaret H.
 Gramm, Mrs. Helen
 Granger, Mrs. Lillian M.
 Grant, James D.
 Grant, John G.
 Graves, Austin T.
 Graves, Howard B.
 Grawoig, Allen
 Gray, Dr. Earle
 Gray, Edward
 Gray, Philip S.
 Green, Michael
 Greenacre, Miss Cordelia
 Ann
 Greenburg, Dr. Ira E.
 Greene, Henry E.
 Greene, Howard T.
 Greenlee, Mrs. William
 Brooks
 Greenman, Mrs. Earl C.
 Gregory, Stephen S., Jr.
 Gregory, Tappan
 Gressens, Otto

ASSOCIATE MEMBERS (continued)

- Grey, Dr. Dorothy
 Griffenhagen, Mrs.
 Edwin O.
 Griffith, Mrs. Carroll L.
 Griffith, Mrs. William
 Griswold, Harold T.
 Grizzard, James A.
 Groak, Irwin D.
 Gronkowski, Rev. C. I.
 Groot, Cornelius J.
 Groot, Lawrence A.
 Grossman, Frank I.
 Grothenhuis, Mrs.
 William J.
 Grotowski, Mrs. Leon
 Gruhn, Alvah V.
 Grunow, Mrs. William C.
 Guenzel, Louis
 Guest, Ward E.
 Gurley, Miss Helen K.
 Gustafson, Gilbert E.
 Gwinn, William R.

 Hadley, Mrs. Edwin M.
 Haffner, Mrs.
 Charles C., Jr.
 Hagen, Mrs. Daise
 Haight, George I.
 Hair, T. R.
 Hajcek, Rudolph F.
 Haldeman, Walter S.
 Hale, Mrs. Samuel
 Hales, William M.
 Hall, Edward B.
 Hall, Mrs. J. B.
 Halligan, W. J.
 Hallmann, Herman F.
 Halperin, Aaron
 Halverstadt, Romaine M.
 Hamm, Fred B.
 Hammaker, Paul M.
 Hammerschmidt, Mrs.
 George F.
 Hand, George W.
 Hanley, Henry L.
 Hann, J. Roberts
 Hansen, Mrs. Carl
 Hansen, Mrs. Fred A.
 Hansen, Jacob W.
 Hanson, Mrs. Norman R.
 Harder, John H.
 Harders, Mrs. Flora
 Rassweiler
 Harding, John Cowden
 Harms, VanDeursen
 Harper, Alfred C.
 Harrington, David L.
 Harris, Mrs. Abraham
 Harris, David J.
 Harris, Gordon L.
 Harris, Stanley G.
 Hart, Mrs. Herbert L.

 Hart, Max A.
 Hart, William M.
 Hartmann, A. O.
 Hartshorn, Kenneth L.
 Hartz, W. Homer
 Harvey, Byron, III
 Harvey, Richard M.
 Harwood, Thomas W.
 Hass, G. C.
 Hay, Mrs. William
 Sherman
 Hayakawa, Dr. S. I.
 Hayes, Charles M.
 Hayes, Harold C.
 Hayes, Miss Mary E.
 Haynie, Miss Rachel W.
 Hays, Mrs. Arthur A.
 Hayslett, Arthur J.
 Hazlett, Dr. William H.
 Hazlett, Mrs. William H.
 Healy, Vincent Jerrems
 Heaney, Dr. N. Sproat
 Hearst, Mrs. Jack W.
 Heaton, Harry E.
 Heaton, Herman C.
 Heffernan, Miss Lili
 Hefner, Adam
 Heide, Mrs. Bernard H.
 Heiman, Marcus
 Heinzelman, Karl
 Heinzen, Mrs. Carl
 Heisler, Francis
 Hejna, Joseph F.
 Heldmaier, Miss Marie
 Helfrich, J. Howard
 Heller, Albert
 Heller, John A.
 Heller, Mrs. Walter E.
 Hellman, George A.
 Hellyer, Walter
 Hemple, Miss Anne C.
 Henderson, Kenneth M.
 Henkel, Frederick W.
 Henley, Dr. Eugene H.
 Hennings, Mrs.
 Abraham J.
 Henry, Huntington B.
 Henschel, Edmund C.
 Herbst, LeRoy B.
 Herron, James C.
 Herron, Mrs. Oliver L.
 Hershey, J. Clarence
 Hertz, Mrs. Fred
 Hertzberg, Lawrence
 Herwig, George
 Herwig, William D., Jr.
 Herz, Mrs. Alfred
 Hesse, E. E.
 Heverly, Earl L.
 Hibbard, Mrs. Angus S.
 Hibbard, Mrs. W. G.
 Hieber, Master J. Patrick

 Hildebrand, Dr.
 Eugene, Jr.
 Hildebrand, Grant M.
 Hill, Mrs. Russell D.
 Hille, Dr. Hermann
 Hillebrecht, Herbert E.
 Hind, Mrs. John Dwight
 Hinman, Mrs. Estelle S.
 Hinrichs, Henry, Jr.
 Hintz, Mrs. Aurelia
 Bertol
 Histed, J. Roland
 Hixon, Mrs. Frank P.
 Hodgkinson, Mrs. W. R.
 Hodgson, Mrs. G. C.
 Hoefman, Harold L.
 Hoffman, Miss
 Elizabeth
 Hoffmann, Edward
 Hempstead
 Hogan, Robert E.
 Hokin, Mrs. Barney E.
 Holabird, W. S., Jr.
 Holden, Edward A.
 Hollander, Mrs. Samuel
 Holleb, A. Paul
 Hollenbach, Louis
 Holliday, W. J.
 Hollis, Henry L.
 Holloway, J. L.
 Holmberg, Mrs.
 Adrian O.
 Holmburger, Max
 Holmes, Miss Harriet F.
 Holmes, J. A.
 Holmes, Mrs. Maud G.
 Holmes, William
 Holmes, William N.
 Holt, Miss Ellen
 Holt, McPherson
 Holub, Anthony S.
 Holzheimer, Carl
 Homan, Miss Blossom L.
 Honsik, Mrs. James M.
 Hoover, Mrs. Fred W.
 Hoover, H. Earl
 Hoover, Ray P.
 Hope, Alfred S.
 Hopkins, Albert L.
 Hopkins, Mrs. James M.
 Hopkins, Mrs.
 James M., Jr.
 Horcher, William W.
 Horne, Mrs. William
 Dodge, Jr.
 Horner, Mrs.
 Maurice L., Jr.
 Hornung, Joseph J.
 Horton, Mrs. Helen
 Horton, Horace B.
 Horween, Arnold
 Horween, Isidore

ASSOCIATE MEMBERS (continued)

- Hosbein, Louis H.
 Hovland, Mrs. John P.
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 Howe, Charles Albee
 Howe, Clinton W.
 Howe, Mrs. Pierce
 Layman
 Howe, Ralph B.
 Howe, Roger F.
 Howes, Mrs. Frank W.
 Howie, Mrs. James E.
 Howse, Richard G.
 Howson, Louis R.
 Hoyne, Miss Susan D.
 Hoyt, Mrs. Phelps B.
 Hraback, L. W.
 Hrdlicka, Mrs. John D.
 Hubbard, George W.
 Huber, Dr. Harry Lee
 Hudson, Miss
 Katherine J.
 Hudson, Walter L.
 Huey, Mrs. A. S.
 Hufty, Mrs. F. P.
 Huggins, Dr. Ben H.
 Huggins, G. A.
 Hughes, John E.
 Hume, James P.
 Humphrey, H. K.
 Huncke, Herbert S.
 Huncke, Oswald W.
 Hunding, B. N.
 Hunt, George L.
 Hurd, Ferris E.
 Hurlbut, Miss
 Elizabeth J.
 Hurvitz, H. R.
 Huska, Mrs. Joseph
 Hust, George
 Huszagh, Ralph D.
 Hutchinson, Foye P.
 Hutchinson, Samuel S.
 Hyatt, R. C.

 Ickes, Raymond W.
 Idelman, Bernard
 Igo, Michael L.
 Ilg, Robert A.
 Illich, George M., Jr.
 Ingalls, Allin K.
 Ingersoll, Mrs. S. L.
 Inlander, N. Newton
 Inlander, Samuel
 Irons, Dr. Ernest E.
 Isaacs, Charles W., Jr.
 Isham, Henry P.
 Ives, Clifford E.

 Jackson, Allan
 Jackson, Archer L.
 Jackson, Mrs. Arthur S.
 Jackson, Mrs. W. A.

 Jacobi, Miss Emily C.
 Jacobs, Julius
 Jacobs, Mrs. Walter H.
 Jacobson, Raphael
 James, Walter C.
 Jameson, Clarence W.
 Jancosek, Thomas A.
 Janson, Dr. C. Helge M.
 Janusch, Fred W.
 Jarchow, Mrs. C. E.
 Jarchow, Charles C.
 Jarrow, Harry W.
 Jeffreys, Mrs. Mary M.
 Jeffries, Dr. Daniel W.
 Jenkinson, Mrs. Arthur
 Gilbert
 Jerger, Wilbur Joseph
 Jetzinger, David
 Jirgal, John
 Jirka, Dr. Frank J.
 John, Dr. Findley D.
 Johnson, Dr. Adelaide
 Johnson, Alvin O.
 Johnson, Calmer L.
 Johnson, Mrs. Harley
 Alden
 Johnson, Joseph M.
 Johnson, Nels E.
 Johnson, Mrs. O. W.
 Johnson, Olaf B.
 Johnson, P. Sveinbjorn
 Johnson, Philip C.
 Johnston, Edward R.
 Johnston, Miss Fannie S.
 Johnston, Mrs. Hubert
 McBean
 Johnston, Mrs. M. L.
 Jolly, Miss Eva Josephine
 Jonak, Frank J.
 Jones, Mrs. C. A.
 Jones, J. Morris
 Jones, James B.
 Jones, Dr. Margaret M.
 Jones, Melvin
 Jones, Miss Susan E.
 Joseph, Mrs. Jacob G.
 Joseph, Louis L.
 Joy, Guy A.
 Judson, Clay
 Juergens, H. Paul
 Julien, Victor R.

 Kahn, Mrs. Arthur S.
 Kahn, Mrs. Henry S.
 Kahn, J. Kesner
 Kahn, Jerome J.
 Kahn, Louis
 Kaine, James B.
 Kamins, Dr. Maclyn M.
 Kane, Jerome M.
 Kanter, Jerome J.
 Kaplan, Morris I.

 Kasch, Frederick M.
 Katz, Mrs. Sidney L.
 Katz, Solomon
 Katzenstein, Mrs.
 George P.
 Katzin, Frank
 Kauffman, Mrs. R. K.
 Kauffmann, Alfred
 Kaufman, Justin
 Kaufmann, Dr.
 Gustav L.
 Kavanagh, Clarence H.
 Kay, Mrs. Marie E.
 Keach, Benjamin
 Kehl, Robert Joseph
 Kehoe, Mrs. High Boles
 Keith, Stanley
 Keith, Mrs. Stanley
 Kelker, Rudolph F., Jr.
 Kelly, Mrs. Haven Core
 Kelly, William J.
 Kemper, Hathaway G.
 Kemper, Miss Hilda M.
 Kempner, Harry B.
 Kempner, Stan
 Kendall, Mrs. Virginia H.
 Kendrick, John F.
 Kennedy, Mrs. E. J.
 Kennedy, Lesley
 Kennelly, Martin H.
 Kenney, Clarence B.
 Kent, Dr. O. B.
 Keogh, Gordon E.
 Kern, Mrs. August
 Kern, H. A.
 Kern, Dr. Nicholas H.
 Kern, Trude
 Kerwin, Edward M.
 Kestnbaum, Meyer
 Kettering, Mrs.
 Eugene W.
 Kew, Mrs. Stephen M.
 Kidwell, L. B.
 Kiessling, Mrs. Charles S.
 Kile, Miss Jessie J.
 Kimball, William W.
 Kimbark, John R.
 King, Clinton B.
 King, Joseph H.
 Kingman, Mrs. Arthur G.
 Kinsey, Robert S.
 Kirkland, Mrs.
 Weymouth
 Kirst, Lyman R.
 Kitchell, Howell W.
 Kitzelman, Otto
 Kleinpell, Dr. Henry H.
 Kleist, Mrs. Harry
 Kleppinger, William H.
 Kleutgen, Dr. Arthur C.
 Klinetop, Mrs. Charles W.

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- Knickerbocker, Miss Paula
Knopf, Andrew J.
Knutson, George H.
Koch, Mrs. Fred J.
Koch, Raymond J.
Koch, Robert J.
Kochs, August
Koehnlein, Wilson O.
Kohler, Eric L.
Konsberg, Alvin V.
Kopf, Miss Isabel
Koppenaar, Dr. Elizabeth Thompson
Kornblith, Mrs. Howard G.
Kosobud, William F.
Kotal, John A.
Kotin, George N.
Koucky, Dr. J. D.
Kovac, Stefan
Kraft, Mrs. Walter A.
Kraft, John H.
Kraft, Norman
Kralovec, Emil G.
Kralovec, Mrs. Otto J.
Kramer, Leroy
Kraus, Peter J.
Kraus, Samuel B.
Krautter, L. Martin
Kresl, Carl
Kretschmer, Herman L., Jr.
Krez, Leonard O.
Kridner, E. A.
Kroehler, Kenneth
Kropp, C. G.
Krost, Dr. Gerard N.
Kuehn, A. L.
Kuh, Mrs. Edwin J., Jr.
Kuhn, Frederick T.
Kuhn, Dr. Hedwig S.
Kunka, Bernard J.
Kunstadter, Albert
Kunstadter, Sigmund W.
Kurfess, John Fredric
Kurtz, W. O.
Kurtzon, Morris
- Lacey, Miss Clara R.
Lacey, Miss Edith M.
Lafin, Louis E., Jr.
Lafin, Louis E., III
Laing, William
Lambert, C. A.
Lampert, Wilson W.
Lanahan, Mrs. M. J.
Lane, F. Howard
Lane, Ray E.
Lang, Edward J.
Langenbach, Mrs. Alice R.
Langford, Mrs. Robert E.
- Langhorne, George Tayloe
Lanman, E. B.
Lansinger, Mrs. John M.
Larimer, Howard S.
Larsen, Samuel A.
Larson, Mrs. Sarah G.
Lassers, Sanford B.
Latshaw, Dr. Blair S.
Lauren, Newton B.
Lautmann, Herbert M.
Lavers, A. W.
Lavezzorio, Mrs. J. B.
Lavezzorio, N. J.
Lavidge, Arthur W.
Law, Mrs. Robert O.
Lawless, Dr. Theodore K.
Lawson, David A.
Lax, John Franklin
Layden, Michael J.
Lazar, Maurice
Lazear, George C.
Leahy, James F.
Leahy, Thomas F.
Leavell, James R.
LeBaron, Miss Edna
Lebold, Samuel N.
Lebolt, John Michael
Lederer, Dr. Francis L.
Lee, David Arthur
Lee, Mrs. John H. S.
Lefens, Miss Katherine J.
Lefens, Walter C.
Leichenko, Peter M.
Leight, Mrs. Albert E.
Leland, Miss Alice J.
Leland, Mrs. Rosco G.
LeMoon, A. R.
Lennon, George W.
Lenz, J. Mayo
Leonard, Arthur T.
Lerch, William H.
Leslie, Dr. Eleanor I.
Leslie, John Woodworth
Lessman, Gerhard
LeTourneau, Mrs. Robert
Leverone, Louis E.
Levinson, Mrs. Salmon O.
Levitan, Benjamin
Levy, Alexander M.
Levy, Arthur G.
Lewis, Mrs. Ellis R.
Lewy, Dr. Alfred
L'Hommedieu, Arthur
Liebman, A. J.
Lillyblade, Clarence O.
Lindahl, Mrs. Edward J.
Linden, John A.
Lindheimer, B. F.
Lingle, Bowman C.
Liss, Samuel
- Little, Mrs. E. H.
Littler, Harry E., Jr.
Livingston, Julian M.
Livingston, Mrs. Milton L.
Llewellyn, Paul
Lloyd, Glen A.
Lochman, Philip
Loeb, Hamilton M.
Loewenberg, Israel S.
Loewenberg, M. L.
Loewenherz, Emanuel
Loewenstein, Richard M.
Logan, L. B.
Long, William E.
Loomis, Reamer G.
Lord, Arthur R.
Lord, John S.
Lord, Mrs. Russell
Loucks, Charles O.
Louer, Albert E. M.
Louis, Mrs. John J.
Love, Chase W.
Lovgren, Carl
Lucey, Patrick J.
Ludolph, Wilbur M.
Lueder, Arthur C.
Lunding, Franklin J.
Luria, Herbert A.
Lusk, R. R.
Lustgarten, Samuel
Lydon, Robert R.
Lyford, Harry B.
Lynch, J. W.
Lyon, Charles H.
- Mabee, Mrs. Melbourne
MacDonald, E. K.
MacIntyre, Mrs. M. K.
MacKenzie, William J.
Mackey, Frank J.
Mackinson, Dr. John C.
MacLellan, K. F.
MacMullen, Dr. Della M.
MacMurray, Mrs. Donald
Madlener, Mrs. Albert F., Jr.
Madlener, Otto
Maehler, Edgar E.
Magan, Miss Jane A.
Magerstadt, Madeline
Magill, John R.
Magnus, Albert, Jr.
Magnuson, Mrs. Paul
Maher, Mrs. D. W.
Main, Walter D.
Majors, Mrs. B. S.
Maling, Albert
Malone, William H.
Manaster, Harry
Mandel, Mrs. Aaron W.

ASSOCIATE MEMBERS (continued)

- Mandel, Edwin F.
 Mandel, Miss Florence
 Mandel, Mrs. Robert
 Manegold, Mrs. Frank W.
 Manierre, Francis E.
 Manierre, Louis
 Manley, John A.
 Manz, Mrs. Carolyn D.
 Maremont, Arnold H.
 Mark, Mrs. Cyrus
 Mark, Griffith
 Marquart, Arthur A.
 Marsh, A. Fletcher
 Marsh, John
 McWilliams, II
 Marsh, Mrs. John P.
 Marsh, Mrs. Marshall S.
 Marston, Mrs. Thomas B.
 Martin, Mrs. George B.
 Martin, George F.
 Martin, Samuel H.
 Martin, Wells
 Martin, Mrs. William P.
 Marx, Adolf
 Marx, Frederick Z.
 Marzluff, Frank W.
 Marzola, Leo A.
 Mason, Willard J.
 Massee, B. A.
 Massey, Peter J.
 Masterson, Peter
 Mathesius, Mrs. Walther
 Matson, J. Edward
 Matter, Mrs. John
 Maurer, Dr. Siegfried
 Maxant, Basil
 Maxwell, Lloyd R.
 Mayer, Frank D.
 Mayer, Mrs. Herbert G.
 Mayer, Herman J., Jr.
 Mayer, Isaac H.
 Mayer, Leo
 Mayer, Oscar F.
 Mayer, Oscar G.
 Mayer, Theodore S.
 Mazurek, Miss Olive
 McAloon, Owen J.
 McAlvin, Mrs. James H.
 McArthur, Billings M.
 McBirney, Mrs. Hugh J.
 McCahey, James B.
 McCarthy, Joseph W.
 McCausland, Mrs.
 Clara L.
 McClun, John M.
 McCord, Downer
 McCormick, Mrs.
 Chauncey
 McCormick, Fowler
 McCormick, Howard H.
 McCormick, Leander J.
 McCormick,
 Robert H., Jr.
 McCrea, Mrs. W. S.
 McCready, Mrs. E. W.
 McCreight, Louis Ralph
 McCutcheon, Mrs.
 John T.
 McDonald, E. F., Jr.
 McDonald, Lewis
 McDougal, Mrs. James B.
 McDougal, Mrs. Robert
 McErlean, Charles V.
 McGraw, Max
 McGurn, Matthew S.
 McIntosh, Arthur T.
 McIntosh, Mrs.
 Walter G.
 McKenna, Dr. Charles H.
 McKinney, Mrs. Hayes
 McLennan, Donald R., Jr.
 McLennan, Mrs.
 Donald R., Sr.
 McLennan, William L.
 McMenemy, Logan T.
 McMillan, James G.
 McMillan, John
 McMillan, W. B.
 McNamara, Louis G.
 McNamee, Peter F.
 McNulty, Joseph D.
 McQuarrie, Mrs. Fannie
 McVoy, John M.
 Mead, Dr. Henry C. A.
 Medsker, Dr. Ora L.
 Melcher, George Clinch
 Melnick, Leopold B.
 Merrell, John H.
 Merriam, Miss Eleanor
 Merrill, Miss Marion E.
 Merrill, William W.
 Metz, Dr. Arthur R.
 Meyer, Mrs. A. H.
 Meyer, Abraham W.
 Meyer, Dr. Charles A.
 Meyer, Charles Z.
 Meyerhoff, A. E.
 Meyers, Erwin A.
 Meyers, Jonas
 Michaels, Everett B.
 Michel, Dr. William J.
 Midowicz, C. E.
 Mielenz, Robert K.
 Milburn, Miss Anne L.
 Milhening, Frank
 Miller, Miss Bertie E.
 Miller, Mrs. Clayton W.
 Miller, Mrs. Donald J.
 Miller, Mrs. F. H.
 Miller, Mrs. George
 Miller, Hyman
 Miller, John S.
 Miller, Mrs. Olive
 Beaupre
 Miller, Oren Elmer
 Miller, Oscar C.
 Miller, Mrs. Phillip
 Miller, R. T., Jr.
 Mills, Allen G.
 Mills, Lloyd Langdon
 Miner, Dr. Carl S.
 Minturn, Benjamin E.
 Mitchell, John J.
 Mitchell, Leeds
 Mitchell, Oliver
 Mock, Dr. Harry Edgar
 Moderwell, Charles M.
 Moist, Mrs. Samuel E.
 Mojonnier, Timothy
 Mollan, Mrs. Ferne T.
 Molloy, David J.
 Mong, Mrs. C. R.
 Monheimer, Henry I.
 Moore, Chester G.
 Moore, Paul
 Moore, Philip Wyatt
 Moran, Miss Margaret
 Morey, Dr. Charles W.
 Morf, F. William
 Morrison, Mrs. C. R.
 Morrison, Mrs. Harry
 Morrison, James C.
 Morrow, Mrs. John, Jr.
 Morse, Mrs. Charles J.
 Morse, Leland R.
 Morse, Mrs. Milton M.
 Morse, Robert H.
 Morton, Sterling
 Moses, Howard A.
 Moss, Jerome A.
 Mouat, Andrew J.
 Moxon, Dr. George W.
 Moyer, E. J. T.
 Moyer, Mrs. Paul S.
 Mudge, Mrs. John B.
 Muehlstein, Mrs. Charles
 Mueller, Austin M.
 Mueller, Miss Hedwig H.
 Mueller, J. Herbert
 Mueller, Paul H.
 Mulford, Miss Melinda
 Jane
 Mulhern, Edward F.
 Munroe, Moray
 Murphy, Joseph D.
 Murphy, O. R.
 Murphy, Robert E.
 Muszynski, John J.
 Myrland, Arthur L.
 Naber, Henry G.
 Naess, Sigurd E.
 Nagel, Mrs. Frank E.
 Nance, Willis D.

ASSOCIATE MEMBERS (continued)

- Naumann, Miss Susan
 Nebel, Herman C.
 Neely, Mrs. Lloyd F.
 Nehls, Arthur L.
 Nellegar, Mrs. Jay C.
 Nelson, Arthur W.
 Nelson, Charles G.
 Nelson, Donald M.
 Nelson, Victor W.
 Neuman, Sidney
 Neumann, Arthur E.
 Newberger, Joseph
 Michael
 Newhall, R. Frank
 Newhouse, Karl H.
 Newman, Mrs. Albert A.
 Newman, Charles H.
 Nichols, J. C.
 Nilsson, Mrs.
 Goodwin M.
 Nishkian, Mrs.
 Vaughn G.
 Nitze, Mrs. William A.
 Noble, Samuel R.
 Nollau, Miss Emma
 Noonan, Edward J.
 Norman, Harold W.
 Norris, Mrs. Lester
 Norton, Christopher D.
 Novak, Charles J.
 Noyes, A. H.
 Noyes, Allan S.
 Noyes, Mrs. May Wells
 Nufer, Gene
 Nusbaum, Mrs.
 Hermien D.
 Nyman, Dr. John Egbert

 Oates, James F.
 Oberfelder, Herbert M.
 Oberfelder, Walter S.
 Obermaier, John A.
 O'Brien, Miss Janet
 O'Connell, Edmund
 Daniel
 Odell, William R., Jr.
 Offield, James R.
 Oglesbee, Nathan H.
 O'Keefe, Mrs. Dennis D.
 O'Keefe, William F.
 Olaison, Miss Eleanor O.
 Oldberg, Dr. Eric
 Oldefest, Edward G.
 Oleson, Wrisley B.
 Olin, Carl E.
 Oliver, Mrs. Paul
 Olsen, Miss Agnes J.
 Olsen, Mrs. Arthur O.
 Olson, Gustaf
 Olson, Rudolph J.
 O'Neil, Dr. Owen
 Onofrio, Mrs. Michael J.

 Ooms, Casper William
 Opeka, Frank M.
 Oppenheimer, Mrs.
 Harry D.
 Orndoff, Dr. Benjamin H.
 O'Rourke, Albert
 Orr, Mrs. Robert C.
 Orr, Thomas C.
 Orthal, A. J.
 Ortmyer, Dr. Marie
 Osborn, Theodore L.
 Ostrom, Mrs. J. Augustus
 Otis, J. Sanford
 Otis, Joseph E.
 Otis, Joseph Edward, Jr.
 Otis, Stuart Huntington

 Paasche, Jens A.
 Packard, Dr. Rollo K.
 Paepcke, Walter P.
 Page, John W.
 Pallasch, Dr. Gervaise P.
 Palm, Felix
 Palmer, James L.
 Palmgren, Mrs.
 Charles A.
 Pandaleon, Costa A.
 Pardee, Harvey S.
 Pardridge, Mrs. E. W.
 Park, R. E.
 Parker, Norman S.
 Parker, Troy L.
 Parks, C. R.
 Parmelee, Dr. A. H.
 Parry, Mrs. Norman G.
 Partridge, Lloyd C.
 Paschen, Mrs. Henry
 Pashkow, A. D.
 Patterson, Grier D.
 Patterson, Mrs. L. B.
 Patzelt, Miss Janet
 Peabody, Howard B.
 Peabody, Miss Susan W.
 Pearl, Allen S.
 Pearse, Langdon
 Pearson, George
 Albert, Jr.
 Peck, Dr. David B.
 Peirce, Albert E.
 Pencik, Jan M.
 PenDell, Charles W.
 Percy, Dr. Mortimer
 Nelson
 Perel, Harry Z.
 Perkins, Mrs. Herbert F.
 Perlman, Daniel
 Perry, Mrs. I. Newton
 Peter, William F.
 Peters, Harry A.
 Petersen, Elmer M.
 Petersen, Jurgen
 Peterson, Axel A.

 Peterson, Mrs. Bertha I.
 Peterson, Mrs.
 Richard E.
 Pfaelzer, Miss
 Elizabeth W.
 Pflock, Dr. John J.
 Phelps, Mrs. W. L.
 Phillips, Dr. Herbert
 Morrow
 Phillips, Mervyn C.
 Phoenix, George E.
 Pick, Albert, Jr.
 Pick, Frederic G.
 Pierce, J. Norman
 Pierce, Paul, Jr.
 Pierson, Joseph B.
 Pink, Mrs. Ira M.
 Pirie, Mrs. John T.
 Plapp, Miss Doris A.
 Platt, Edward Vilas
 Platt, Mrs. Robert S.
 Plummer, Comer
 Pobloske, Albert C.
 Podell, Mrs. Beatrice
 Hayes
 Polk, Mrs. Stella F.
 Pollak, Charles A.
 Poole, Mrs. Marie R.
 Pope, Herbert
 Popenhagen, Henry J.
 Porter, Charles H.
 Porter, Edward C.
 Porter, Mrs. Frank S.
 Porter, Henry H.
 Porter, Louis
 Porter, Mrs. Sidney S.
 Portis, Dr. Sidney A.
 Post, Mrs. Philip Sidney
 Pottenger, William A.
 Potts, Albert W.
 Poulson, Mrs. Clara L.
 Powills, Michael A.
 Pratt, Mrs. William E.
 Pray, Max
 Prentice, John K.
 Price, John McC.
 Primley, Walter S.
 Prince, Mrs. Arthur C.
 Prince, Harry
 Prince, Rev. Herbert W.
 Prince, Leonard M.
 Pritchard, Richard E.
 Probst, Marvin G.
 Proxmire, Dr.
 Theodore Stanley
 Prussing, Mrs. R. E.
 Pucci, Lawrence
 Puckey, F. W.
 Purcell, Joseph D.
 Purcey, Victor W.
 Putnam, Miss Mabel C.

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Pyterek, Rev. Peter H.

Quick, Miss Hattiemae

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Racheff, Ivan
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Radniecki, Rev. Stanley
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Raftree, Miss Julia M.
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Raymond, Mrs.

Howard D.
Razim, A. J.
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Reed, Mrs. Lila H.
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G. William
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Rubovits, Theodore
Ruettinger, John W.
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 VanCleaf, Mrs. Noah
 VanCleaf, Paul
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 Christopher
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 Webster, Miss Helen R.
 Webster, Henry A.
 Webster, Mrs. R. S.
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 Weil, Martin
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 Weiner, George
 Weinstein, Dr. M. L.
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 Weisbrod, Benjamin H.
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 Kenneth
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 Wells, Miss Cecilia
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 Wendell, Miss
 Josephine A.
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 Wentworth, Mrs.
 Sylvia B.
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 West, Thomas H.
 Westerfeld, Simon
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 Wheeler, Leo W.
 Wheeler, Leslie M.
 Wheeler, Mrs. Robert C.
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 White, Joseph J.
 White, Richard T.
 White, Sanford B.
 White, Selden Freeman
 Whiting, Mrs. Adele H.
 Whiting, Lawrence H.
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 Wieland, Mrs.
 George C.
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 Wilcox, Robyn
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 Wilder, Mrs. Paul

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 Wilkinson, Mrs.
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 Wilkinson, John C.
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 Willey, Mrs. Charles B.
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 Williams, Kenneth
 Williams, Rowland L.
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 Wilson, Miss Lillian M.
 Wilson, Morris Karl
 Wilson, Mrs.
 Robert E.
 Wilson, William

Winans, Frank F.
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 Winston, Hampden
 Winston, James H.
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 Wolf, Mrs. Albert H.
 Wolf, Walter B.
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 Gertrude D.
 Wood, Mrs. Hettie R.
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 Woods, Weightstill
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 Works, George A.
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 Marilyn Jean
 Wupper, Benjamin F.

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 Yondorf, Milton S., Jr.
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 Young, E. Frank
 Young, George W.

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 Zabel, Mrs. Max W.
 Zapel, Elmer J.
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 Ziebarth, Charles A.
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 Zimmerman, Louis W.
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 Zork, David
 Zurcher, Mrs. Suzette M.

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 Arline V.
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 Baer, Mervin K.
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 Bartlett, Frederic C.
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 Bowen, Mrs. Louise
 de Koven
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 Butler, John M.
 Butz, Theodore C.
 Cameron, Will J.
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 Cary, Dr. Eugene
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 Connor, Frank H.
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 Fitzpatrick, Mrs. John A.
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 Golden, Dr. Isaac J. K.
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 Green, Robert D.
 Griest, Mrs. Marianna L.
 Gross, Henry R.
 Guthman, Edwin I.
 Hartwig, Otto J.
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 Hills, Edward R.
 Jackson, Miss Laura E.
 Jennings, Ode D.
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 Kraft, James L.
 Lebold, Foreman N.
 Levitetz, Nathan

Loewenthal, Richard J.
 McCormack, Prof. Harry
 Moeling, Mrs. Walter G.
 Monroe, William S.
 Norton, R. H.
 Pitzner, Alwin Frederick
 Plunkett, William H.
 Poor, Fred A.
 Redmond, Forrest H.
 Robson, Miss Sarah C.
 Rogerson, Everett E.
 Schnering, Otto Y.
 Scott, Robert L.
 Shields, James Culver
 Silverthorne, George M.
 Silvertongue, Mrs. Ray
 Smith, Charles Herbert
 Steffey, David R.
 Thornton, Dr. Francis E.
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 Wetten, Albert H.
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 Gray, Hitous
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 Lambertsen, John G.
 Lambrecht, Carl R., Jr.
 Lamont, Daniel J.
 Lance, O. C.
 Lane, George A.
 Lang, Eugene C.
 Langan, Harley B.
 Lange, A. G.
 Lange, Hugo C.
 Langer, Joseph S.
 Langert, A. M.
 Langford, Joseph P.
 Laramore, Florian E.
 Large, Judson
 Larkin, Mrs. Walter D.

 Larsen, Roy R.
 Larson, Simon P.
 LaSalle, Miss Janet A.
 Lasch, Charles F.
 Lasch, Harry
 Lash, Dr. A. F.
 Laud, Sam
 Lavezzorio, John M.
 Law, M. A.
 Lawton, Robert M.
 Layfer, Seymour J.
 Lazar, Charles
 Leahy, George J.
 Leahy, William H.
 Leander, Russell J.
 Lechler, E. Fred
 Lederer, Irving G.
 Lederer, Joseph M.
 Lee, Miss Alice Stephana
 Lee, John H.
 Lehman, John L.
 Lehman, Lloyd W.
 Lehr, Arthur
 Leindecker, Charles L.
 Leiner, John G.
 Leith, John A.
 Leland, Samuel
 Lello, Herbert F.
 Leonard, Charles J.
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 Catharine
 Lesch, John F.
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 Levin, Robert E.
 Levine, William
 Levine, William D.
 Levitan, Moses
 Levitt, Dr. Judith U.
 Levy, Albert H.
 Lewendowski,
 Sigmund W.
 Lewis, B. F.
 Lewis, Edward J.
 Lewis, Ellis R.
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 Lewis, Mrs. Walker O.
 Lickfield, Rev. F. W.
 Liebenow, J. Gus
 Liffendahl, Dr.
 Richard A.
 Lindberg, Donald F.
 Lindell, Arthur G.
 Lindeman, John H.
 Lindley, Walter C., Jr.
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 Line, Dr. Eva J.
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 Linthicum, J. Francis
 Lipman, Abraham
 Lippincott, R. R.
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 Lipsey, Howard
 Lipshutz, Joseph
 Lissner, Herbert H.
 Liston, Thomas P.
 Litschgi, Dr. J. J.
 Litten, Chapin
 Little, Wilson V.
 Littman, Benson
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 Lockefer, Frank V.
 Lockett, Harold
 Lockwood, Lawrence A.
 Lockwood, Maurice H.
 Lockwood, Mrs.
 Maurice H.
 Loebe, Edward E.
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 Lohman, Joseph D.
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 Long, R. E.
 Loomis, D. P.
 Loomis, Miss Marie
 Looney, Charles C.
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 Lowy, Walter H.
 Lozar, Rajko
 Lubig, Max
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 Frederick Orr
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 Lundy, Francis L.
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 Eugene F.
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 Lyon, Mrs. Jeneva A.

 MacCowan, Hervey L.
 MacFarland, Hays
 Macfarland, Lanning
 Macholz, Rev. Ignatius
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 MacKenzie, William J.
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 MacKiewich, Justin
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 John A., Jr.
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Manning, Mrs.	McConnell, Thomas C.	Merkl, Miss Laura M.
Paul D. V.	McCoy, Charles S.	Merrick, Mrs. James W.
Manno, Vincent P.	McCracken, John W.	Merritt, Thomas W.
Mantout, Mrs. Bernard	McCracken, Kenneth	Mertz, Miss Henriette
Mara, Walter T.	McCreery, C. L.	Metcoff, Eli
Maragos, Samuel C.	McCurdie, N. J.	Mettenet, Francis K.
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Marek, R. S.	McDermott, William F.	Meyer, Mrs. Clara K.
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Herbert I.	McDougal, Robert, Jr.	Milhoan, F. B.
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Franklin, Jr.	McDougal, Mrs.	Millard, Mrs. E. L.
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Gilbert H.	McEldowney, C. R.	Miller, Dr. C. O.
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Marshall, Charles A.	McHenry, Roland	Miller, Mrs. Grace
Marshall, Frank G.	McKay, Miss Mabel	Edwards
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- Modene, Oscar F.
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 Mont Pas, W. F.
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 Moore, Kenneth W.
 Moore, Lucien W.
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 Harry A.
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 O'Brien, M. J.
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 O'Brien, Vincent
 O'Brien, Wilbur J.
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 O'Connor, John J.
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 Olson, H. Edsall
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 Pacer, T. S.
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 Parker, Lee N.
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 Penner, Samuel
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 Peterkin, Daniel, Jr.
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 Peters, Russell L.
 Petersen, Lawrence A.
 Peterson, H. R.
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 Pettinger, Andrew
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 Phelps, Miss Elizabeth

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- Phelps, Erastus R.
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 Florence M.
Picher, William S.
Piers, Dr. Gerhart
Pike, Dr. Wayne S.
Pikiel, Mrs. A. J.
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Poe, Miss Frances
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Pollard, Willard L.
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Polyak, Dr. Stephen
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Pope, Sidney T.
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Potter, Charles S.
Potter, Howard I.
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Potter, Dr. Robert
 Morse
Pound, G. C.
Power, John W.
Powers, William F.
Praeger, Charles H.
Pratt, Jacob C., Jr.
Preble, Robert C.
Preikschat, Raymond W.
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Presson, Gerald
Preston, Charles D.
Price, Allen H.
Price, Frederick J.
Price, Griswold A.
Price, Owen N.
Prince, William Wood
Prindiville, James A.
Pringle, Don
Prior, Frank O.
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Proby, Dr. Edmund A.
Pruitt, Raymond S.
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Pulham, Herbert J.
Purdy, J. D.
Purdy, John P.
Purinton, Dr. Robert F.
Purvis, Miss Sadie
Pushkin, Dr. E. A.
Putnam, B. H.
Putterman, A. Jerry
Puzey, Russell V.
Querl, E. P.
Quetsch, L. J.
Quisenberry, T. E.
Radack, Mrs.
 Dorothy W.
Rademacher, Miss
 Marge
Rampona, Dr. Louis
Rank, Emil T.
Ranney, George A., Jr.
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Rasmussen, L. M.
Rathburn, M. Hudson
Ratner, Walter B.
Raubitschek, Dr.
 Howard A.
Ray, Harold R.
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Rayner, Lawrence
Reace, William T.
Read, Freeman C.
Ready, Charles H.
Redding, George H.
Reed, Ernest H.
Reed, Mrs. Frank C.
Reed, Guy E.
Reed, L. F. B.
Reed, Philip G.
Reedy, Mrs. T. J.
Reeves, H. Edward
Regan, Mrs. Ben
Regnery, Mrs. Henry
Reicin, Frank E.
Reid, Alf F.
Reilly, George A.
Reilly, W. J.
Rein, Lester E.
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 Katherine
Render, Miss Forsythe
Renken, Miss Martha
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 William H.
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Richard, Sister
Richards, Mrs. Harper
Richards, Longley
Richards, Oron E.
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Riedeman, H. T.
Riggs, Mrs. Joseph A.
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Riley, John H.
Rinaker, Samuel M.
Rioff, Harry A.
Ritsos, Nicholas T.
Rivera, J. A.
Rizner, Homer R.
Roach, O. R.
Roach, Rollin W.
Robandt, Al
Robbins, Burr L.
Robbins, Laurence B.
Roberts, J. K.
Robertson, Egbert
Robertson, Theodore B.
Roche, John Pierre
Roddewig, Clair M.
Roden, Carl B.
Rodger, John H.
Rodriguez, Dr. Arthur A.
Rodwick, Frank P.
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Rogers, Alfred M.
Rogers, Donald D.
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Rogers, Lester C.
Rogers, Milton P.
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Rogers, Thomas W.
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Romer, Mrs. Arthur C.
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Roos, Edwin J.
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Rose, Jack
Rose, Orion L.
Roseland, J. G.
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Rosenberg, Mrs.
 Bernhard
Rosenfels, Mrs.
 Irwin S.
Rosenson, Herzl
Rosenthal, M. A.
Rosin, George I.
Rosner, Manuel
Ross, Dr. Chester John
Ross, Earl
Ross, Dr. Martin T.
Ross, Mrs. Sophie S.
Roth, Arthur J.
Rothschild, Edward
Rowan, Mrs. Paul
Rowe, F. B.
Rubert, William F.
Rubinson, Adolph A.
Ruby, Norman
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Rugen, Fred A.
Ruhl, Robert H.
Runzel, William L., Jr.

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- Ruppert, Max K.
 Rush, Richard B.
 Ruskin, Mrs. Harry H.
 Russell, Harold S.
 Rutherford, M. Drexel

 Saalfeld, Harry H.
 Saarinen, W.
 Sackett, DeForest
 Saffir, M. A.
 Sager, Mrs. S. Norman
 Salomon, Ira
 Saltiel, Dr. Thomas P.
 Salzman, Philip H.
 Sample, Joseph S.
 Sampson, H. R.
 Samuels, Albert
 Samuels, Benjamin
 Samuels, Julius
 Samuels, Richard L.
 Sanborn, Mrs. V. C.
 Sandrook, Edward G.
 Sanfilippo, John J.
 SanFilippo, Dr. Paul D.
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 Sang, Philip D.
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 Savage, Stanley
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 Schaefer, W. A.
 Schaffner, Arthur B.
 Schaffner, Miss Marion
 Schelter Charles H.
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 Schlossman, Norman J.
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 Schmus, Elmer E.
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 Schnute, Dr. William J.
 Schoch, M. G.
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 Schonthal, B. E.
 Schooler, Lee
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 Schrader, John P.
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 Schultz, William H.
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 Schulze, Paul, Jr.
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 Schwartz, Milton H.
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 Scott, Dr. Winfield W.
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 Seaholm, A. T.
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 Selfridge, Calvin F.
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 Sexton, Mrs. Thomas G.
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 Shafer, Frederick C.
 Shafer, Dr. S. J.
 Shanahan, J. Robert
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 Shannon, Charles E.
 Shannon, Peter M.
 Shantz, Marc A.
 Sharpe, Dr. Kenneth P.
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 Shaw, John W.
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 Shedd, Jeffrey
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 Sherman, Robert T.
 Sherwin, William A.
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 Shields, G. A.
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 Shlaes, Harry L.
 Shlopach, Wallace B.
 Short, William H.
 Shrader, Frank K.
 Shuman, John R.
 Sibley, Joseph C., Jr.
 Siebel, George E.
 Sieber, Paul E.
 Sill, Vincent D.
 Silverstein, Milton
 Simpson, Bruce L.
 Sims, Frank S.
 Sims, Paul K.
 Sims, William W.
 Sinaiko, Dr. Edwin S.
 Singer, William A.
 Siniarski, T. A.
 Sinnerud, Dr. O. P.
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 Sklower, Miss Ruth I.
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 Sloan, Dr. LeRoy H.
 Sloan, Dr. Noah H.
 Sloan, William F.
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 Smalley, John H.
 Smick, Robert W.
 Smith, C. D.
 Smith, Charles L.
 Smith, Charles Lambert
 Smith, Dean C.
 Smith, Dr. Edward C.
 Smith, Edward R.
 Smith, H. Kellogg
 Smith, Harold A.
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 Smith, Robert C.
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 Sollitt, Sumner S.
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 William
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 Spiegel, Mrs. Philip
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 Springsguth, Robert C.
 Stagman, Dr. Joseph
 Stagman, Nathan
 Stahl, Harold A.
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 Stanbery, J. N.
 Stange, Howard W.
 Stanley, Donald
 Stannard, F. J.
 Stanton, Edgar, Jr.
 Stanton, Mrs. Francis R.
 Stanton, Lyman A.
 Starbuck, J. C.
 Stark, W. J.
 Starr, Harry
 Starrett, Miss Carolyn J.
 Starshak, A. L.
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 Steffen, Charles
 Steffey, D. Earl
 Steigmann, Dr. Frederick
 Stein, Mrs. S. Sidney
 Steins, Mrs. Halsey
 Steinwedell, William
 Stensland, T. N.
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 Sternberg, Edward
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 Stevens, Mrs. R. St. John
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 Stratton, Robert C.
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 Stuart, Robert K.
 Stuart, William M.
 Stumes, Charles B.
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 Sullivan, J. E.
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 Suyker, Hector
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 Swett, Warren C.
 Swidler, Louis
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 Tarnopol, Emil
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 Tarrson, Albert J.
 Tatge, Paul W.
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 Taylor, Edward L.
 Taylor, Fitzhugh
 Taylor, George H.
 Taylor, Orville
 Taylor, Mrs. Samuel G.
 Teichen, E. H.
 Templeton, Kenneth S.
 Temps, Leupold
 Teninga, Alfred J.
 Tenney, Henry F.
 Terhune, Miss Virginia
 Terker, Sam
 Teter, Park
 Thatcher, Dr. Harold W.
 Theis, Dr. Frank V.
 Thiele, George C.
 Thillens, Melvin
 Thomas, Miss Martha
 Thompson, A. M.
 Thompson, Mrs. Florence S.
 Thompson, H. Hoyt
 Thompson, Dr. John R.
 Thompson, K. I.
 Thompson, Dr. Willard O.
 Thoren, Mrs. J. N.
 Thoresen, H. B.
 Thornburn, John M.
 Thorne, Frank H.
 Thorson, Reuben
 Throop, Mrs. George Enos
 Tiberius, George
 Tice, Winfield
 Tillotson, J. W.
 Timmings, G. H.
 Tinsley, Dr. Milton
 Tippens, Mrs. Albert H.
 Tipple, F. A.
 Tonk, Percy A.
 Tonn, George
 Toomin, Philip R.
 Topaz, Martin
 Topolinski, J. J.
 Torff, Selwyn H.
 Trager, D. C.
 Trainor, H. J.
 Traut, Bernard H.
 Travelletti, Bruno L.
 Traver, George W.
 Traynor, William Knowlton
 Treffeisen, Gustave
 Tregenza, A. E.
 Trimarco, Ralph R.
 Triner, Joseph
 Troeger, Louis P.
 Trumbull, William M.
 Tucker, Albert B.
 Turner, Dr. Herbert A.
 Turney, Russell J.
 Tuteur, Charles
 Tuteur, Irving M.
 Tyrrell, Miss Frances
 Ughetti, John B.
 Uhlmann, Richard F.
 Ullmann, S. E.
 Ultsch, W. Lewis
 Urbain, Jules, Jr.
 Urbain, Leon F.
 Urban, Andrew
 Urban, Dr. H. J.
 Uretz, Daniel A.
 Utley, Mrs. Clifton M.

ANNUAL MEMBERS (continued)

Vail, Mrs. Daniel M.	Warner, Mason	Wickman, C. E.
Vail, J. Dean, Jr.	Warton, Frank R.	Wicks, Dr. Mark
VanBuskirk, M. G.	Washburn, Dr.	Wieland, John
Vance, Charles C.	Kenneth C.	Wilber, Allen S.
Vance, S. M.	Wasson, Mrs. Isabel B.	Wilbur, Lawrence S.
Vanderkloot, Dr. Albert	Wasson, Theron	Wilby, A. C.
VanderKloot, Nicholas J.	Waters, Gerard E.	Wilds, John L.
VanderPloeg, Frank	Waterstreet, W. Neal	Willhite, James A.
VanDeventer, William E.	Watkins, George H.	Wilkinson, William D.
VanKampen, A. H.	Watling, John	Willard, Nelson W.
VanMell, Herman T.	Watson, John A.	Williams, Albert W.
VanNice, Errett	Watt, Howard D.	Williams, Frederick C.
VanSchaick, Mrs.	Watt, Richard F.	Williams, Lawrence
Ethel R.	Watts, Amos H.	Williams, Robert G.
Varty, Leo G.	Webb, Dr. Edward F.	Williams, W. J.
Vaughan, Alan W.	Webber, Harold H.	Willis, Ivan L.
Velvel, Charles	Weber, James E.	Willott, Mrs. Adele
Verhaag, Dr. Joseph E.	Webster, Dr. Augusta	Willy, Gustave J.
Vernon, Dr. Leroy N.	Webster, Frederick F.	Wilson, Allen B.
Vick, Maurice B.	Webster, N. C.	Wilson, Arlen J.
Vilsoet, William	Weichselbaum, Dr.	Wilson, Percival C.
Vinnedge, Albert S.	Paul K.	Wilson, Dr. William
Vogel, James B.	Weick, George T.	Wiltsee, Herbert
Vogt, Earle E.	Weidert, William C.	Windchy, Mrs.
Voltz, D. H.	Weidler, Donald A.	Frederick O.
VonGehr, George	Weigle, Mrs. Maurice	Winsberg, Herbert H.
VonHenke, Mrs.	Weil, Mrs. Carl H.	Winterbotham, John R.
Edmund J.	Weiner, Charles	Wiseman, William P.
Vydra, Frank C.	Weinress, S. J.	Wisner, C. V., Jr.
	Weisbrod, Maxfield	Wlocholl, Arthur
Wach, Dr. Edward C.	Weiss, Alexander	Wolf, Morris E.
Wachter, Frederick J.	Weitman, W. E.	Wolf, Orrin E.
Wadler, Milton Arnold	Weitzel, Carl J.	Wolff, Frank C.
Wagner, Clarence P.	Weitzel, Mrs. Tony	Wolff, Oscar M.
Wagner, Mrs. David H.	Welfeld, Marvin J.	Wood, Rollin D.
Wagner, Richard	Wells, Sidney	Wood, Truman
Wahl, Herman L.	Wenholz, Walter W.	Wood, William A.
Wahl, Orlin I.	Wenninger, William C.	Woodside, John T.
Waite, Roy E.	Werrenrath, Reinald, Jr.	Woodson, William T.
Waldeck, Herman	Wescott, Dr. Virgil	Woolard, Francis C.
Waldie, Benjamin D.	Wesley, C. N.	Woulfe, Henry F.
Waldman, Dr. Albert G.	West, James D.	Wrisley, George A.
Walgren, Lawrence C.	West, Richard H.	Wyatt, Harry N.
Walker, Dr. Alfred O.	Westbrook, Charles H.	Wybel, L. E.
Walker, Frank R.	Western, North	
Walker, Frederick W., Jr.	Wetherell, Warren	Yarnall, Frank H.
Walker, Reno R.	Wetmore, Horace O.	Yates, John E.
Walker, Wendell	Wetten, Walton	Yates, P. L.
Wall, Dr. Frank J.	Wheeler, Mrs. Seymour	Yates, Schuyler
Wallenstein, Sidney	Whipple, Gaylord C.	Yavitz, Sidney M.
Waller, William, Jr.	Whipple, Miss	Yaworski, A. F.
Wallerstein, David B.	Velma D.	Yohe, C. Lloyd
Wallgren, Eric M.	Whiston, Frank M.	Yonkers, Edward H.
Walters, Gary G.	White, Philip M.	Young, C. S.
Waltman, C. E.	Whitelock, John B.	Young, Dr. Donald R.
Walz, John W.	Whitfield, George B.	Young, J. L.
Wanger, David E., Jr.	Whitmore, Lyle S.	Youngberg, Arthur C.
Warady, Dr. Seymour C.	Whitnell, William W.	Youngren, W. W.
Wardwell, H. F.	Whitney, Mrs. Charles R.	
Ware, Mrs. Robert R.	Wible, R. R.	
Ware, Mrs. Thomas M.	Wickersham, Mrs.	Zadek, Milton
Ware, Willis C.	Lucille	Zaring, Paul B.

ANNUAL MEMBERS *(continued)*

Zatz, Sidney R.	Zimmerman, E. W.	Zipse, Edwin W.
Zelinko, George J.	Zimmerman, Dr.	Zitzewitz, Arthur F.
Zimmer, Harry L.	Harold W.	Zitzewitz, Mrs.
Zimmerman, Austin M.	Zimmerman, Preston	W. R.
Zimmerman, Carl	Zimmermann, Mrs. P. T.	Zolla, Abner M.

DECEASED, 1953

Allen, Albert H.	Froning, Miss	Ottenheimer, Fred L.
Arnold, Mrs. Hugo F.	Margaret E.	
Babbitt, B. J.	Greenlee, William B.	Pearson, Miss Kathleen
Bengtson, J. Ludvig	Hoffman, Joseph	Perlman, I. B.
Boyd, B. W.	Huggett, Martin C.	Peterson, V. W.
Butterworth,		Pfaelzer, Mrs. Monroe
Mrs. William	Johanigman, S. E.	Pitt, A. A.
Clancy, John D., Jr.	Krasberg, Rudolph	Roberts, Harlow P.
Clarke, H. R.	Mayer, Fritz	Sandel, Mrs. Clara
Clow, J. Beach	McKellar, Archibald D.	Stern, Jacob S.
Epstein, Mrs. Arnold	Miller, L. A.	Winston, Mrs. Farwell
Fairman, Miss Marian	Nolte, Mrs. Charles B.	Woodyatt, Dr. Rollin
Ferry, John A.		Turner

Articles of Incorporation

STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

Whereas, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A.D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

Now, therefore, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

In Testimony Whereof, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSEN,
Secretary of State.

[SEAL]

TO HON. WILLIAM H. HINRICHSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archaeology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaulus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer

Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaas, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }
COOK COUNTY } ss.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,

[SEAL]

NOTARY PUBLIC, COOK COUNTY, ILL.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 3

Pursuant to a resolution passed at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

CHANGE IN ARTICLE 1

Pursuant to a resolution passed at a meeting of the corporate members held the 15th day of November, 1943, the name of FIELD MUSEUM OF NATURAL HISTORY was changed to CHICAGO NATURAL HISTORY MUSEUM. A certificate to this effect was filed November 23, 1943, in the office of the Secretary of State for Illinois.

Amended By-Laws

DECEMBER, 1945

ARTICLE I

MEMBERS

SECTION 1. Members shall be of twelve classes, Corporate Members, Honorary Members, Patrons, Corresponding Members, Benefactors, Contributors, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of Twenty Dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Corresponding Members shall be chosen by the Board from among scientists or patrons of science residing in foreign countries, who render important service to the Museum. They shall be elected by the Board of Trustees at any of its meetings. They shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 7. Any person contributing to the Museum One Thousand Dollars (\$1,000.00) or more in cash, securities, or material, may be elected a Contributor of the Museum. Contributors shall be exempt from all dues and shall enjoy all courtesies of the Museum.

SECTION 8. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00) at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 9. Any person paying into the treasury of the Museum the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the vote of the Board,

become an Associate Member. Associate Members shall be exempt from all dues, and shall be entitled to tickets admitting Member and members of family, including non-resident home guests; all publications of the Museum issued during the period of their membership, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Member. Non-Resident Associate Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 10. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Twenty-five Dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the Member to free admission for the Member and family to the Museum on any day, the Annual Report and such other Museum documents or publications issued during the period of their membership as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such Member shall be entitled to become an Associate Member.

SECTION 11. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of Ten Dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the Member to a card of admission for the Member and family during all hours when the Museum is open to the public, and free admission for the Member and family to all Museum lectures and entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the museums during a visit to the cities in which the co-operative museums are located.

SECTION 12. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

ARTICLE II

BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of the month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

ARTICLE III

HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, any Trustee who by reason of inability, on account of change

of residence, or for other cause or from indisposition to serve longer in such capacity shall resign his place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

ARTICLE IV

OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

ARTICLE V

THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation, except as hereinafter provided. He shall make disbursements only upon warrants, signed by such officer, or officers, or other persons as the Board of Trustees may from time to time designate.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely: the President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum. The President or any one of the Vice-Presidents, jointly with either the Chairman or any one of the other members of the Finance Committee, are authorized and empowered (a) to sell, assign and transfer as a whole or in part the securities owned by or registered in the name of the Chicago Natural History Museum, and, for that purpose, to endorse certificates in blank or to a named person, appoint one or more attorneys, and execute such other instruments as may be necessary, and (b) to cause any securities belonging to this Corporation now, or acquired in the future, to be held or registered in the name or names of a nominee or nominees designated by them.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of the Chicago Natural History Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

ARTICLE VI

THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific Departments of the Museum—Anthropology, Botany, Geology, and Zoology—each under the charge of a Chief Curator, subject to the authority of the Director. The Chief Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific Departments shall be appointed and removed by the Director upon the recommendation of the Chief Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

ARTICLE VII

THE AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

ARTICLE VIII

COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension, and Executive.

SECTION 2. The Finance Committee shall consist of not less than five or more than seven members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-Chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regularly elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to make and alter investments from time to time, reporting its actions to the Board of Trustees. The Finance Committee is fully authorized to cause any funds or investments of the Corporation to be made payable to bearer, and it is further authorized to cause real estate of the Corporation, its funds and investments, to be held or registered in the name of a nominee selected by it.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

ARTICLE IX

NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. The By-Laws, and likewise the Articles of Incorporation, may be amended at any regular meeting of the Board of Trustees by a vote in favor thereof of not less than two-thirds of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.





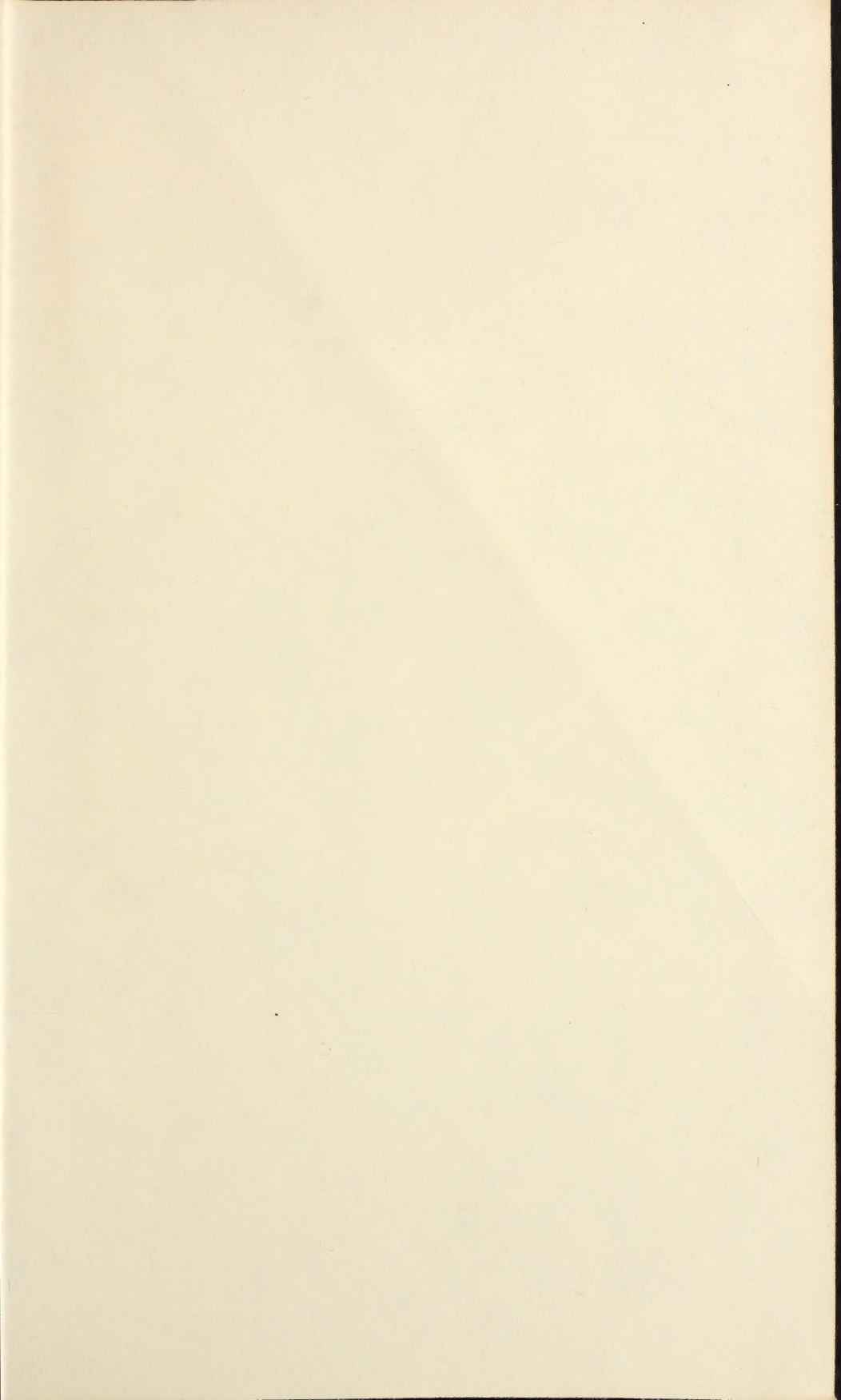
















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